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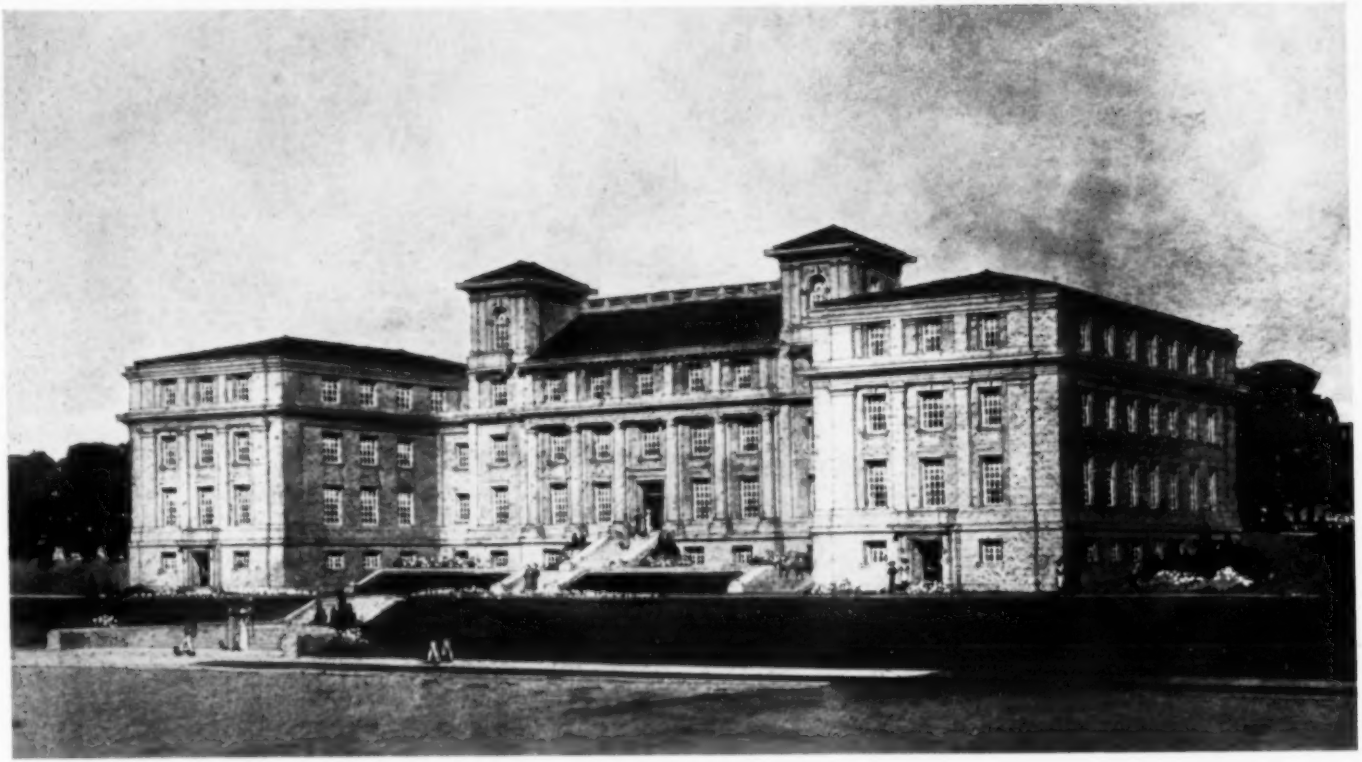

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LOSSES IN THE COOKING OF VEGETABLES.[1]

JOSEPHINE THORNDIKE BERRY.

For some years persons interested in the cost and nutritive value of foods have laid emphasis upon the question of the loss occurring in cooking vegetables, as one of importance in household economy and requiring investigation. It has been a subject of still further significance to teachers of Home Economics who were striving to acquire an understanding of the scientific facts and principles underlying cooking processes, in the faith that with such understanding the subject may be taught as an applied science.

In 1897 the Office of Experiment Stations published Bulletin No. 42 containing a report of analyses made to determine losses in boiling vegetables—those chosen for the investigation being potatoes, carrots, and cabbage. The conclusions drawn from the results of the work emphasized the loss of nutrients from paring potatoes, and from soaking them in water before cooking; likewise from the usual practice of rejecting the water in which the root and green vegetables had been cooked, since such extracts contain a considerable portion of the solids of the fresh substance.

The bulletin had a wide-spread influence. It brought about a pretty general recognition of this source of waste, and an effort on the part of teachers to diminish it. In it the case of the Irish potato had been made clear. The losses were negligible when potatoes, without the skins removed, were plunged into boiling water, and cooked rapidly. The results for cabbage and carrots were not as conclusive.

[1] Submitted in partial fulfilment of the requirements for the degree of Master of Arts in the Faculty of Philosophy, Columbia University.

In all methods used, the losses were considerable, averaging 25 per cent of all nutrients for carrots, and 30 per cent to 40 per cent of all dry matter in cabbage. Advantage of one method over another was slight. On the whole, however, it seemed wise to teachers to recommend cooking in as little water as possible; and conservation of the nutrients lost in solution by using the liquid from the cooking, in the making of sauces to be served over the vegetable, or in soup. Such a recommendation was often difficult to use in practice. Many persons have no liking for sauces on vegetables and the soup kettle is not always an available means of using such extracts. Recognizing these difficulties, some teachers have assumed the application of the Irish potato method to many of the root vegetables, believing that cooking "in the jackets" would preserve their nutrients, sugars and mineral materials, from solution in the water. A few have urged the cooking of some of the green vegetables—spinach, and so-called greens—without water in their own juices and which are quite quickly extracted.

Throughout the report just cited, chief stress is laid upon losses in nitrogen and carbohydrate. The importance of such losses is measured by the ratio of their money value to the family income. Similarly, teachers generally have seen the question as one of preventable waste, having an economic significance in proportion to the element of waste. The theory was parallel with the explanation of nutrition in terms of protein and energy metabolism. Our present understanding includes also the mineral metabolism.

The need of the body for mineral substance has long been recognized and affirmed in general statements. But further than the skeletal requirements for calcium, and the office of haemoglobin in the oxidative processes, their functions in nutrition has been little emphasized. Recent work, however, leads strongly to the belief that a balance for mineral foods is as essential to physical well-being as it is for nitrogen or energy. It is known that in some way contractility and irritability of muscle tissue are dependent upon certain inorganic salts; that the rhythmical beating of the heart is controlled by calcium, sodium, and possibly potassium present in the blood and tissues; that retention of sulphur and phosphorus within the body runs parallel to retention of protein; that the regulation of the alkalinity of the blood is accomplished, in part at least, through the phosphates; that the blood and other body fluids must be kept alkaline through a balance between acid and base decomposition products in metabolism.

It is conjectured that the complicated chemical reactions of the protein metabolism are made possible and, indeed, controlled by the electrolytes.

Vegetables are plentiful sources of mineral foods. They furnish iron in much larger proportion than do most animal foods. They are our chief dependence for potassium and sodium salts of organic acids. In the processes of metabolism these acids are oxidized. The bases become available for neutralization of the phosphoric and sulphuric acids resulting from the breaking down of protein; thus helping to maintain the alkalinity of the body tissues and fluids. It is clear that the establishment of these facts adds to the value formerly attributed to vegetables as food, increases especially the significance of green vegetables in the dietary; and emphasizes the wisdom of conserving their mineral constituents.

This bit of investigation was undertaken, therefore, in the hope of obtaining some analyses whereby the relative losses from the methods of cooking commonly employed might be compared. It was hoped that the results, though too few from which to generalize broadly, would, nevertheless, point to the method of least waste; and thus contribute somewhat toward the teaching of cooking as applied science.

The method most commonly employed in cooking vegetables is boiling in water, rejecting the water. A few people steam certain green vegetables. It seemed reasonable to assume that of these two methods steaming offered the probability of a smaller loss of soluble substances. That, however, was an assumption to be tested. Spinach and cabbage were selected as the most generally used of the green vegetables, the type known to lose most through boiling in water. Both were prepared and cooked as though for serving, except that seasonings were not added.

The spinach was washed carefully many times, discarding all portions which appeared damaged This occasioned a loss of one-third the purchased weight, though largely of sand and soil. After drying to remove adhering drops of water and thorough mixing to insure uniform samples, it was divided into three portions—No. 1 was reserved for analysis of the fresh substance; No 2 was steamed over a kettle of boiling water; No. 3 was boiled in as little water as was deemed possible without replenishing. The time required for steaming and boiling was the same. Judged by appearance, the bulk of spinach left from the steaming was half greater than of that which had been

boiled. The three portions were then spread on enameled-ware trays and dried in the ovens of the gas ranges at a temperature not above 100°C. The resulting air dry material was weighed, ground in a coffee mill, and bottled ready for analysis.

The method of preparing and cooking the cabbage was the same, except for the repeated washings. The outer bruised and discolored leaves and the heart were rejected. The waste amounted to one-sixth the weight as purchased. To insure representative samples, three heads of cabbage were cut into thirds, one-third being distributed to each of the portions, of which one was dried uncooked; one after steaming; one after boiling in water. The time required for steaming was about one-third longer than for boiling, and there was no noticeable difference in bulk between the two methods.

With carrots, the analysis of the bulletin before cited showed increasing loss according to the proportion of cut surface. The plan followed here was to compare the results of the usual and the least amount of such surface. The carrots as purchased were divided into three lots, as nearly uniform as could be judged by size and weight. Those of lot No. 1 were scraped, put through a meat-grinder and dried; of lot No. 2 were washed and plunged whole into boiling water; of No. 3 were scraped, cut into pieces of a size attractive for serving (approximately $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$ inch), and likewise nearly covered with boiling water. As might be expected, the carrots boiled whole were somewhat longer in softening than were those previously cut into small pieces. Both portions were crushed, dried in the gas ovens, ground, weighed, and put into bottles.

Calculations of total solids and moisture content were made from samples of the above air dry substances, after further drying (to constant weight) at 100°C. The weight of ash from samples designed for other determinations afforded data for the total ash content. Determinations of phosphorus, calcium and magnesium were made as follows:

TABLE I.

Losses in cooking vegetables. Percentage of fresh edible portion.

KINDS OF VEGETABLES.	SOLIDS.	ASH.	P_2O_5.	CaO.	MgO.
		Per Cent.	*Per Cent.*	*Per Cent.*	*Per Cent.*
Spinach (boiled)	31.59	51.65	52.33	6.89(?)	60.38
Spinach (steamed)	0.18	9.34	5.23	8.69	7.85
Difference	31.41	42.31	47.10	+1.80(?)	52.53
Cabbage (boiled)	32.86	42.62	33.93	27.66	26.71
Cabbage (steamed)	2.54	11.47	1.79	9.31	4.23
Difference	30.32	31.15	32.14	18.35	22.48
Carrots (cut up and boiled)	10.05	11.48	22.88	10.88	19.19
Carrots (boiled whole)	6.28	7.38	17.97	8.77	19.19
Difference	3.77	4.10	4.91	2.11	0.00

TABLE II.

Losses in cooking vegetables. Percentage of solids.

KINDS OF VEGETABLES.	ASH.	P_2O_5.	CaO.	MgO.
	Per Cent.	*Per Cent.*	*Per Cent.*	*Per Cent.*
Spinach (boiled)	29.08	30.01	+36.00	42.11
Spinach (steamed)	9.21	5.33	8.58	7.73
Cabbage (boiled)	12.39	+0.32	+10.01	+11.83
Cabbage (steamed)	9.18	+0.63	5.91	1.62
Carrots (cut up and boiled)	6.91	13.84	0.05	8.01
Carrots (boiled whole)	4.90	12.46	2.61	14.42

A first glance at Table I reveals the relatively small losses from steaming and the great losses from boiling cabbage and spinach. Losses in ash constituents as against total solids are given added significance by the fact that much of the solid substance is cellulose and material not digested. The losses from boiling spinach are around 50 per cent, except in the case of calcium, where there is doubt of the figures due to a known source of error in the analysis. The losses for cabbage though lower, are, nevertheless, large—something more than 30 per cent. And though the losses for carrots are still less, they are of significance, averaging somewhat more than 15 per cent.

These figures are borne out by the report of a French investigation[2] in which cabbage, Brussels sprouts, cauliflower, celery, asparagus, corn, beans, and lentils were boiled thirty minutes. The average of losses was 36 per cent for total mineral matter, and 50 per cent for

[2] Experiment Station Record, vol. 22, no. 4, p. 368.

potassium. Similarly large losses of total salt, and an even higher percentage loss of potassium (72 per cent), were found from the long cooking of several cereals, dried beans, and peas.

A comparison of the figures in Table I shows a much lower and a relatively insignificant loss from steaming the green vegetables used. The superiority of the method which effects a saving of more than 40 per cent of the ash for spinach and 25 per cent for cabbage hardly seems open to question.

With carrots, although there is a distinct saving from boiling whole, without removing the skins, the gain is less than was expected—only about 3 per cent. The analyses of Irish potatoes referred to before showed a gain of 15 per cent from boiling "in the jackets." There is, however, an economy of substance and of time not appearing from the analysis. The waste involved in scraping the fresh carrots was 20 per cent; that in peeling after boiling 10 per cent of the weight as purchased. Further, the process of removing the skins after cooking is easier as well as shorter than scraping beforehand.

It should be noted here that the analyses for sugar loss from carrots were made including steaming as a method of cooking. The results obtained indicate that steaming should have been included in this comparison. Judging from the sugar losses, it should be as effective a method for economy of salts as with spinach or cabbage.

The calculations of the losses as percentage of solids, shown in Table II permits a comparison of the methods of cooking according to the food substance served, aside from its value according to the amount of fresh substance cooked. It will be noticed that each group shows a larger loss of total salts from boiling. The plus signs indicate an apparent gain instead of loss, as compared with the analyses of solids from the raw material. In each case there is a saving of phosphorus, by steaming, as with carrots, boiling whole. The apparent disagreement between the figures showing gains and the loss in total salts, may be explained by the greater loss of potash salts. Such an explanation finds support in the enormous losses of potassium reported by the French investigation.

Judged from the analyses already given, the contribution of carrots to the mineral metabolism is important. In common with other similar root vegetables, they are also a source of carbohydrate in the diet. According to Farmers' Bulletin No. 295:[3] "Sugar is an important constituent, 12 per cent being sometimes present, though perhaps, 5 per cent or 6 per cent would more nearly represent the average."

[3] Extract from Farmers' Bulletin No. 295, p. 37.

A judgment, therefore, as to the method of least waste in cooking carrots must take into account not only losses of salts but of carbohydrate.

Analyses to determine the losses of soluble carbohydrates were made from the water employed in the cooking processes. To those already used, steaming was added.

Steaming showed a loss of 0.48 grams soluble carbohydrate per 100 grams carrot, or about 6 per cent of the amount found in the raw substance. Boiling whole showed a loss of 1.44 grams or 17 per cent. Boiling after cutting up showed a loss of 2.18 grams or 26 per cent.

Confirmation of these figures to a considerable degree is offered in a European investigation, wherein it was found that when carrots were steamed they became soft a little more quickly than when cooked in hot water; and lost considerably less material. The water over which they were steamed contained 0.69 per cent of the total material, as compared with 3.75 per cent in the case of the water in which they were boiled.

The results of this investigation emphasize throughout the large percentages of mineral constitutents extracted by boiling spinach, cabbage, and carrots in water; likewise a considerable proportion of soluble carbohydrate extracted from carrots. The green vegetables lost most heavily. Spinach gave up more than 50 per cent, and cabbage more than 40 per cent of all salt present in the fresh substance; while the carrots which were cut up before boiling lost 11½ per cent of total salts, and 23 per cent of phosphorus in addition to 26 per cent of total soluble carbohydrate.

These figures find essential corroboration in the general averages for similar losses reported in the investigations already referred to; which also justify the applications of deductions from them to many other vegetables of the same types.

All the work points clearly to the conclusion that such losses are too great to be disregarded whether they be estimated as loss of money or of food nutrients. That, in turn, emphasizes the importance of utilizing the material extracted; or for employing a method of cooking by which it is more largely retained.

In these trials, the losses from steaming averaged about 10 per cent for spinach and cabbage—a saving as compared with boiling of 40 per cent and 30 per cent respectively, while boiling carrots whole without removing the skins saved about 4 per cent of the losses resulting from cutting up before boiling. It is to be regretted that this investigation

affords no data as to the mineral loss from steaming carrots, since the small loss of soluble carbohydrate resulting from the use of that method suggests the probability of a similarly small loss for other soluble constituents. The water over which the carrots were steamed contained only 6 per cent of the soluble carbohydrate present of the soluble substance—a saving of 11 per cent over the method of boiling carrots whole; and of 20 per cent over the usual method of cutting into small pieces before boiling. These results are confirmed by other analyses only in the matter of soluble carbohydrate loss from carrots. They show, however, positive gains in all instances. The losses of mineral substance from the green vegetables, and of sugars from carrots through steaming, were relatively small, and the advantage over boiling in water correspondingly large. Cooking carrots whole effected an economy of 4 per cent of the salt; which must be considered as still further increased by a saving of 10 per cent of the fresh substance due to decreased waste from removing the skins after boiling. Even to this there is still to be added an economy in time and effort through peeling after cooking.

These trials, therefore, warrant the suggestions that wherever the materials extracted by boiling vegetables cannot be acceptably utilized, a very large proportion of the loss of mineral salts from green vegetables and of soluble carbohydrate from roots may be prevented by cooking in steam. It seems probable that steaming root vegetables will protect from loss of mineral substances in like degree. It is proved, to the extent of these observations, that cooking carrots whole decreased the losses of both mineral salts and sugar in a sufficient measure to justify the use of this method of cooking rather than of the one more commonly employed.

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A RATIONAL METHOD IN THE PRACTICE FIELD FOR STUDENTS IN DIETARY ADMINISTRATION.[1]

FLORENCE R. CORBETT.

"Out of the fullness of the heart the mouth speaketh," and sometimes the fullness of knowledge of existing conditions and the vision of what these conditions might be, are an incentive to speech. From a ten years' experience and observation of fitting household arts students into practice fields in dietary administration, certain theories which are herein presented in the form of an outline have crystallized into a definite conception of methods which will bring results superior to those now obtained.

Until recently it has been relatively difficult to obtain an opportunity for work in any practice field whatsoever for the newly graduated household arts student, so that almost any such opportunity was prized regardless of what the ideal practice field, had it existed, might have afforded. In fact the ideal practice field seems not to have existed even in imagination. The students were translated to gain their experience from the class room and laboratory, where the largest quantities handled were seldom more than those for the average private household, to the hospital household numbering from 500 to 1000 persons, where the quantities were so large that the former methods of handling did not apply and many of the smaller recipes refused to work. The adjustment of the student dietitian to this strange environment sometimes involved the entire institution in a temporary giddiness. That many such students obtained something of value from the experience and developed into efficient dietitians is as much to the credit of the native qualities of the student as to the nature and opportunities of the practice field.

Again, students asked permission to work for experience in restaurants and lunch rooms. After trial in some of the large, more complex, and highly organized of these, the students were pronounced entirely impractical, and permission for further experience was with-

[1] Read by title at the Administration Section of the American Home Economics Association, Lake Placid, N. Y., June, 1912.

drawn. Various charges were made as to the inefficiency of domestic science and household arts graduates. After a time the training schools reached the conclusion that the pursuit of the existing courses did not entirely fit the student for administrative work, and that what was called "inefficiency" in the practice field was really lack of preparation. Thereupon courses bearing directly on the problems of administrative work were introduced for those preparing for institutional work.

With the recognition of the claim on the curriculum made by the institution, came the recognition of the need of a practice field where the student might gain first hand knowledge of the problems of institutional work without assuming unwarranted responsibility for their handling. In the larger schools the first thought has been to make use of the opportunities nearest at hand—the school residence dining hall, the school lunch room, or both—first as a means of demonstration, and second as an opportunity for the student to gain actual experience. We hear from one place and another that this work has been "successful," that "students are doing the actual work" in such and such places. Upon investigation it appears that a student taking any active part in the lunch room or dining room is regarded as the "successful" feature. Whether the student's experience there has clarified her ideas, defined and strengthened her method, formed her judgment in the management of food choice, purchase, preparation and service; whether the material gain to her in power is worth in dollars and cents what she has put into it of time, energy, and tuition fees; whether the department in which she has obtained this experience has been able to maintain an efficiency standard while sidetracking its administrative force into teaching lines; whether under such circumstances it was even possible for the student to learn good methods, to say nothing of the best; indeed whether the student was prepared even to observe correctly—are questions not considered as factors in the "success" of the plan.

Indeed, judged by these last standards very little of this work has been more than partially successful. In various professions and lines of business where "experience" under direction is a part of the required preparation for independent work, the student is admitted only to the departments or divisions where his experience will be economically "successful." He must be able to render service worth at least as much to the concern as the time required by the head of the department to supervise and instruct him. The firm would lose by any

less business-like arrangement, and the student would lose by an experience gained in a scheme not wholly business-like and therefore not fitting him for advancement.

This is the point apparently lost to view in the present methods of giving practical experience in dietary administration to our household arts students. No practice can be thoroughly advantageous to a student if obtained under conditions which are not economical, not practical, not approximate to what she will find in the field of work to which she aspires. Her method of work will be of doubtful value if acquired in an organization run at a financial loss in order to give her "experience," and in which the entire scheme of management is adapted to student capacity. On the other hand the experience that will count for efficiency will be that in which the student has marched lock-step with other employees in the efficient and purely commercial field; where she has been the equivalent of one whole employee; where she has carried the work of one "station," and not where from two to five students are required to do the work of one employee. Cases are not unknown where, in spite of the students' work abolishing the necessity of a pay-roll, the school has had to meet a deficit in the department for the sake of student experience. It is hardly reasonable to expect that a student experienced in such methods as these should cope otherwise than unsuccessfully after her graduation with the situation confronting her as manager of a dining room or lunch room.

It may be asked: "How is a student direct from the class room, to perform the work of a trained and experienced employee and escape the demoralizing experience of representing one-half or one-third of an employee?" The reply is first of all to avoid the present method of leaping from the class room to the highly complex system of food administration of the large hospital, the large restaurant, and large school dining hall. For the solution of our difficulty we must recall the prototype of the practice method and also fall back upon an educational principle, both of which have been submerged of late in misdirected efforts toward opening practical work.

The prototype of the present practice field was the apprentice field of older days and combined several excellent features which could be followed with advantage in our present system. First, the field was not too large nor too complex for the comprehension of the apprentice; second, the work did not involve the leap from the known to the absolutely unknown with no experience to guide; third, the period

of training was made sufficiently long to insure the skill which comes only from the repetition of a process; fourth, the period of training was sufficiently long to insure reimbursement of the master through the acquired skill of the apprentice; and fifth, the privilege of practicing the trade depended upon the efficiency thus acquired. These features made apprenticeship favorable alike to the apprentice, to the master, and to the public. And furthermore the plan demonstrates the application of the educational principle referred to, that of progress from the known to the unknown by successive steps.

Having gotten away from this last principle, by ignoring the law of association, in transplanting our students directly from the class room to the highly organized field which bears little relation to any of their past experiences, we are confronted by the necessity of making good to the student the knowledge which should have intervened and should have come through experience. To do this the practice student must be tutored and coached constantly, in fact, be told what she is seeing (for otherwise she may not see what she has before her); she must be pushed and pulled through all the mental processes that should develop naturally with experience. Carried to its logical conclusion this course of action would necessitate a tutor at the elbow of the student the entire time. Granting the absurdity of the conception, even if this be done, the results are obtained at a cost out of all proportion to what the average student gains from such a course. It is well to remember that it is the average student who must be considered in these plans, for the exceptional student will, as she always has, make the most of her opportunities. It is, however, too much to expect a profession to consist exclusively of exceptional people.

If now we reform our conception of the practice field, using the skeleton afforded by the best of the mediaeval apprentice method and letting its growth and power come from natural development according to the law of association, we then have an efficient system of so complete and natural a plan as to be almost self-operating—the graded system of practice fields. Three distinct general grades are easily recognizable as essential to complete experience in dietary administration, and within these there may be further subdivisions and grading of work according to the maturity of the pupil and the number of pupils to be handled at one time. The first grade naturally consists of the first step beyond the class room and laboratory experience under teaching supervision.

In the class room or laboratory the student has learned the principles underlying all groups of processes in the selection, preparation, and service of food to groups varying from the size of the average household to such larger groups as the school kitchen laboratories can serve, generally not over fifty. Each student has had probably one practice lesson in each station, as vegetable cook, as meat cook, as dessert cook, as waitress, as kitchen assistant, as pantry assistant, etc. She has had instruction in marketing, has visited markets, has done a little marketing for classes, has had some drill in estimating quantities used as a basis for placing large orders. But four essentially important features in preparation for independent work are necessarily omitted in the class room and must be provided at this juncture: first, the opportunity for correlating all the processes previously practiced, including accounting, for the sake of the managerial concept of responsibility and organization; second, the opportunity for repetition of processes until skill results; third, practice in handling quantities of foods many times as large as class room experiences could permit, developing a new set of methods and proportions applicable only to large quantities; fourth, the opportunity to adapt and apply the increased knowledge to meet requirements in some specific field as the hospital, or the commercial lunch room or school dining-hall.

It should be axiomatic that if the practice student is to gain much from experience in any or all of these processes, she must be able to work sympathetically in whatever field she finds her opportunity and to this end experience in the first of the four essential features supplies a valuable foundation for those that follow. Logically, the first grade of practice field work is found in the very small institution where the quantities to be handled do not exceed those in the past experience of the student, where in fact the detail of all processes required will come well within her comprehension, but where she will have the responsibility of planning and correlating all the work, and of bringing all processes to the conclusion required by imposed standards, such as obtaining satisfactory meals for a given group for a prescribed sum, or making all expenses and 6 per cent profit. This sort of experience is properly found in a small tea-room managed in connection with the school dining-hall, or the small hospital of not more than fifty beds. The special diet kitchen of the large hospital also gives opportunity for this work. In such places the newly graduated household arts student could be really useful and find the work within her com-

prehension, and her mind free to study the development of the work, not paralyzed by its magnitude as happens in the large field attempted at this stage.

Two months of such work will suffice to demonstrate whether the student possesses any managerial ability, whether her field for future work will best be limited in scope to work of the first grade, or whether her capacity justifies the pursuit of advanced and extended opportunities. On these lines should the decision be made to afford the student an opportunity for work in the second grade.

A perception of the responsibilities of the manager, the necessity for organization, discipline, and watchfulness of detail, being obtained in the first grade, the student is in a position to gain most from the opportunity to "fit into" a larger field, where she may work side by side with the meat cook, pastry cook, baker, waitresses, and other employees, first; as assistant, then gradually assuming full responsibility in succeeding rôles as repetition of processes gives her the requisite skill and judgment. The length of time spent in this, the second grade, must depend upon three things: first, previous experience which may shorten any of the apprenticeships; second, the aptitude of the student; and third, the purpose of her training. It is conceivable that the time might vary from three months to three years according to the variations in conditions.

The work of this, the second grade, should be done in an institution numbering not less than three hundred residents. The school lunch room and college residence hall furnish excellent fields. The point to be emphasized is that the student's work must stand the commercial test; that she must be able to turn out work of the same grade as the regular employee; and that she be not advanced until she has met absolutely all the requirements of each station. In meeting this test she has finally covered the four fundamental essential features of training which the class room cannot afford, emphasizing the one involving the repetition of processes which the superficial student finds tiresome and does not recognize as valuable. Thus in this grade it is possible to weed out those whose sincerity of purpose, courage and perseverance do not justify the opportunity for advancement to the third grade, nor the faith that they will ultimately qualify as thoroughly capable, competent food administrators.

In the third grade the student steps into the relation of assistant to the manager of a large field such as the hospital dietary department or the college dining hall. There under direction she has opportu-

nities for practice and observation in selecting and buying food and other supplies, for planning the menus and the work for employees, for demonstrating her skill in achieving results and her judgment in adapting her work to conditions. At this step she may be worth a small salary or her maintenance, if not at first possibly after a month or two of such experience. This grade should not occupy less than three months in one institution and might profitably be extended to a full year divided among two or three institutions of different types or under widely different conditions. Such experience would furnish the best possible preparation for independent work.

This practice course, which adds at least a year to the period of preparation for the field of dietary administration, affords advantages to the training school, to the student, to the professional dietitian, to the institutional management employing a dietitian, and to the public served by such institutions. The advantage to the school which is preparing the student will be three-fold: the cost of supervision of the practice work is reduced to a minimum as the responsibilities fall naturally upon the administrative heads of the practice fields; the weeding out of ineffectual material, as the students qualify for advancement from grade to grade, insures the direction of teaching energy into profitable channels and does not hold out to the student the false hope of ultimate success where there can be no success; and not the least of the advantage to the school is the result that its graduates will be known for thorough and excellent work. To the student untried by experience and hoping to be truly valuable in her new field of work, it gives justifiable courage and confidence to know that she will not be advised to undertake a task beyond her capacity, and that she will be prepared to lift and carry a burden and will not impose an added one in whatever place she is called upon to serve. Once launched in the work as a professional dietitian, she will realize power in her work and "success" in the ease with which she carries responsibility. The greatest possible comfort to the sincere mind will lie in the knowledge of the value of her services which are really worth what is paid for them.

All this is of priceless value to the institution management. The security in the assurance that the woman who is recommended as dietary administrator knows all the details of the work and that round pegs will not be called upon to fill square holes, would seem to the harassed superintendent the dawn of a wonderful era. Of late the institution has been threatened with the swinging of the pendulum

in the other direction, the one extreme having been the danger of exploiting the services of the apprenticed nurse, the other now being the danger of exploiting and disorganizing the institution for the sake of giving experience to inadequately prepared student dietitians. When the practice work of the student dietitian or food administrator is graded as the practice work of the student nurse now is, the prejudice against the dietitian which now exists in some quarters will disappear, and the deserved confidence of the institution and the public be won.

A "closed system" which would ultimately destroy itself is not advocated. In the above, principles rather than system have been emphasized and the plan herein outlined is an example of the principles in action. The plan itself is capable of endless adaptation and development according to varying conditions and should be used only in accordance with the principles presented.

Adding a year to the period of preparation for professional work is a course of action never greeted with enthusiasm by the candidates for certificates of proficiency, but wisely conducted the final result of such a course is to raise the professional standing of those who have completed the additional year. In this case the fact that students pursuing the additional work herein outlined are in a position to earn a large part, if not all, of their expenses during the year, should serve as an incentive for spending the additional time and for achieving the higher qualifications.

THE DIET KITCHEN.[1]

MABEL C. LITTLE.

The modern diet kitchen, an important part of every well planned and well organized hospital, has reached its present degree of efficiency gradually. The need for such a kitchen was first recognized by some leaders in the profession of nursing, and their suggestions have been successfully carried out by graduates of schools of domestic science and household administration.

The purpose of the diet kitchen is two-fold—educational and practical, furnishing as it does an important part of the education of the nurse, and at the same time materially aiding the hospital and physician in caring for the needs of the patients. On account of the growing importance of the study of preventive medicine and diet, and the increasing number of diseases in which carefully planned dietaries are substituted for medicine, the careful supervision of the prescribed dietaries and instruction in dietetics to the nurses are assuming a more important place in the hospital. In many of our hospitals the diet kitchen is an afterthought, and consequently occupies the only available space, making the best of existing conditions. In others, although it was planned for, it was an experiment, there being no precedent to follow.

It seems that today the diet kitchen has passed the experimental stage, and that now we should establish standards for the judging of diet kitchens so that the builders of institutions may be aided not only in avoiding mistakes, but in building kitchens in which the most efficient service may be attained. If kitchens are poorly planned the hospital will suffer, for even the best employees can not do their best work under poor conditions.

What would be an ideal diet kitchen? The ideal diet kitchen would be one in which the nurses receive an excellent practical training, fitting them for their professional career, and one in which the food for the patients is prepared and served in the best possible way.

[1] Read by title at the Administration Section of the American Home Economics Association, Lake Placid, N. Y., June, 1912.

It is the aim to outline, briefly, some suggestions for the solution of this problem, applicable to a large institution, but adaptable also to smaller ones. Many modern hospitals are built on the pavilion plan, or, if in any other style, the floors reserved for private patients are usually one above the other, with the kitchens and diet kitchens on either the top floor or in the basement, the floors being connected by elevators and dumb-waiters. There are advantages and disadvantages to both of these plans. If the kitchen is in the basement it is convenient for the delivery of supplies and disposal of garbage, but it lacks sunshine and ventilation, and the odors rise through the building. A kitchen on the top floor is light and well ventilated, there are no odors to disturb the patients, but the arrangements for the delivery of supplies and disposal of garbage are not convenient, and the noise from the machinery in the kitchens prevents the use of the floor below for patients. This might be used for operating rooms, sterilizing or gauze rooms, or dormitories for servants. The modern fireproof buildings seem to transmit noise and vibrations more readily than those of other construction, but no other kind is considered for a modern hospital.

In this paper the general kitchen problems are left out, and the feeding of the private patients and the preparation of the extra diets for the public wards are the only questions considered.

The kitchen floor, whether in the basement or top floor, should be divided into several rooms: First, a kitchen with range, steam kettle, vegetable steamers and tables, where a professional cook, either man or woman, will prepare the meats, vegetables, and soups for the private patients; second, adjoining the kitchen should be the diet kitchen, containing a range, sink, cupboards and utensils; here the nurses will prepare the broths, custards, salads, desserts and all special orders and special diets; third, a serving room, adjoining the kitchen and diet kitchen, fitted out with steam tables, coffee urns, dish warmers, tray racks, dish washer, cupboards for dishes, a small refrigerator, sinks, broilers and toaster, and drawers for linen and silver; two or three dumb-waiters, the number depending upon the size of the institution, should connect the serving-room with the floors to be served; fourth, a milk room supplied with sterilizers and all necessary apparatus, where the feedings for the infants may be prepared with aseptic precautions; fifth, a refrigerator room with cold storage compartments for the use of both kitchens, with one compartment reserved for the milk; in this room should be an ice crusher and an ice cream

freezer with motor; sixth, a dining-room for the employees; seventh, three lavatories, one for the nurses and two for employees.

The nurse's work in the diet kitchen should be made progressive, so that during the time of service here she may learn to do all of the different kinds of work, beginning with the simpler things: the making of broth, beef balls, beef juice, dressing of squabs, and so on, then the salads and desserts. After this she can serve the trays in the serving-room, where the chef carves the meat, and the trays having been set up and marked, the cold food salads and butter can be taken from the refrigerator, the hot food from the steam table on heated dishes, and the tray sent by the dumb-waiter and served at once to the patient.

Economy of food is one of the greatest advantages of this method of serving, for every time food is divided and put into receptacles, a certain amount is lost and the food becomes a few degrees colder. This method will do away with the eating by servants and nurses of food intended for the patients. There will be great saving particularly in butter, bread, coffee, and cream, as well as in the cooked food, for no matter how carefully the amounts are measured from the kitchen there is always some difference in this amount and the amount served, and it is difficult to have this food always returned to the kitchen. If the trays are returned to the kitchen the waste can be noted and to a certain extent regulated. The labor of distributing supplies through the hospital would be materially lessened, although each floor must keep a small supply of milk, broth, eggs, oranges, and lemons in a refrigerator for the nourishments. The noise of the handling of dishes, if taken from the floor, will add much to the comfort of the patients in the rooms adjoining the serving pantry.

The dietitian will be able to supervise the serving of the food and be sure that it is served as planned, avoiding the mistakes sometimes made.

In some hospitals the nurses prepare all the food for the private patients, but will the trained nurses ever be called on professionally to cook roasts for fifty or sixty people? From the patient's point of view can we expect the meat and vegetables to be well cooked when the nurses are continually changing, and as many of them have had no previous experience in cooking, can we expect them to become experts in a few weeks? The dietitian has many other things to watch beside the cooking of meat, and knowing that the success in cooking meat, our most expensive food, depends largely upon judgment and experience, is it sensible to entrust this to inexperienced

people? The French do not consider a chef competent to cook meat until he has served a three or more years' apprenticeship.

The orders of squabs, broilers, steaks, and chops should be cooked by the nurse in the diet kitchen or serving-room.

The silver required by an up-to-date hospital is expensive, and this can receive much better care and is less liable to be lost if it all returns to the one serving-room. The method of serving trays from a general serving-room has been done for many years in many of the Catholic hospitals of the country.

The room set aside for the preparation of the infant's food should be kept as spotless as an operating room, with everything in the room cleanable. Here, the technique of the operating room should be observed: one nurse in sterile cap and gown, hands scrubbed with an antiseptic solution, with sterile sheets covering the tables and using nothing but sterile utensils and bottles for mixing the feedings. Another nurse in cap and gown should assist by pouring the milk from the cans and bottles. This work should be most carefully superintended by the dietitian, that no slips occur in the technique or errors in the formulae.

The planning of the menus for the private patients is one of the dietitian's duties. These will vary with the season, location, and general policy of the hospital.

The lectures to the nurses must be, in large part, theoretical, in order to cover the ground necessary to pass the required examinations of the State Registration Board.

Some hospitals have class-rooms arranged with individual gas burners as in school kitchens, where cooking lessons can be given. This is good but does not seem a necessity, for usually arrangements can be made so that these practical lessons may be given in the diet kitchen at some time when it is not in use. The equipment necessary for a diet kitchen depends entirely upon the amount and kind of work to be done in the kitchen.

THE HOUSEKEEPER DIETITIAN IN THE HOSPITAL FIELD.[1]

MARY A. LINDSLEY.

The housekeeping dietitian has a very broad and interesting field. Her work may cover the entire housekeeping department or it may only include certain parts of it. If it does cover the entire field it is one of the most important positions in the household. It is an ideal profession for a woman, one in which she can do her best work, and if she puts her personality and enthusiasm into it can make it show as much individuality as she could in her own home. She is the one person in the hospital who can give it atmosphere an of home.

Her work will embrace the managing of the laundry and linen room, the cleaning and care of the nurses' home, general kitchen, employing the help, and perhaps the buying of the supplies needed for these departments. In fact it will embrace just as much of housekeeping as she is willing to do and capable of handling. And here should be emphasized the importance of every woman handling all the work for which she is mentally and physically capable, and not hesitating because it isn't the work she was engaged to do. The hospital needs women who are willing to shoulder its burdens.

In order to handle this work the housekeeping dietitian will need a kitchen matron, head laundress, a competent woman in the linen room, and, depending on the size of her hospital, an assistant, someone in each place who will care for the details and on whom she can depend, and in whom she can instill the importance of feeling that the work is entirely theirs and that not an article be wasted that can possibly be utilized.

The cleanliness is one thing that needs constant looking after and to which the dietitian must give her personal attention. In the general kitchen and in the buying of its supplies will be the most absorbing work. The making of the menus for the different people of the household; regulating the kitchen-help schedules so that each one is a

[1] Presented at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

part of the machinery; giving out the supplies and checking their quantities, so that the dietitian knows where the supplies are used and for what; seeing that the food leaves the general kitchen in such condition that it cannot be criticised and in proper quantities, these are some of the duties of the housekeeping dietitian.

The employees look to the dietitian and housekeeper to take a personal interest in their meals, and it more than pays when they know that someone is looking after their food, and attending to their wants.

The nurses, one of the most important factors in the hospital, who are expected to give their best mentally and physically, cannot do so if they do not have wholesome, seasonable, and appetizing food, and above all, never know what they are going to have. It seems as though the hospital should pay more attention to the nurses' food, and that the dietitian is the one who must do this. The house-staff and supervisors get the best meals but they also greatly appreciate a little personal interest. Thus the dietitian has her entire family, as well as patients, and if she has ward, semi-ward, and private patients she has a great variety of meals to put out. And here comes the advantage in buying her own supplies. She knows the cost, the season, the cost of labor, and she can give a greater variety, a more seasonable meal, when she only is responsible for the cost and output. It is every dietitian's pride to have a low per capita rate, but she must keep in mind the high cost of food, and the rights of each member of the institution.

The work of the laundry is closely connected with that of the linen rooms. The buying of linen, the prices paid, the quality purchased, depend all upon the use and care given it. Most articles of linen in the hospital are used once and then laundered so that the wear in washing is greater than that from actual use. No one realizes this sooner than the purchaser. Consequently it is necessary for her to know the method employed in the washing. If the laundry is run as a separate department, the laundress wants to maintain it at as low a cost as possible, which may result in larger linen bills. When you realize that a towel, for instance, is used at its longest twenty minutes, and yet it takes one hour and a quarter for the laundry to put it out in its quickest time, the necessity for a good soap, and the avoiding of acids are most important. It may raise the maintenance of the laundry, but it will pay in the end.

The quality of the sheet and the laundrying of it are of as great importance to the patient as the food. Nothing is more annoying than

badly washed and mangled bedding. It also gives the housekeeper as keen pleasure to know her linen is well made, mended and washed as it does to know her food is as nearly perfect as possible.

In engaging the employees, scheduling the work so that each one is independent of the other and each one having a list of work, is a great advantage in reducing the payroll and in getting better results. Employees like to feel that they are a part of the great machinery, and that they, by careful use of supplies increase their value to the hospital. When the housekeeper can get her employees to take this attitude she has not only helped the individual but her institution.

Buying the supplies takes a great deal of time; seeing different representatives, quotations over the phone, and frequently a visit to the markets, all are necessary. The salesman who calls takes time, but it is an advantage to see him for he always gives some information that is valuable, if not in buying his goods in purchasing from someone else. And if he calls several times and does not get an interview, he is apt to carry away the impression that there is some graft system. For this very reason, it seems an advantage to buy from several different firms dealing in the same line of goods. It is impossible for the woman filling such a position to have regular hours, and she must be big enough to realize that the work of managing the housekeeping department is an absorbing one, and that when emergencies arise it is her duty and pleasure to adjust them. Calls on her time will come early and late, and it is the woman who is ready to meet these who is in demand. This does not mean that she should have no time, but her position is one of the most wearing in the institution. She will have every complaint on food, laundry, cleaning, inefficient help, and other complaints which do not belong to her. Therefore it is necessary that she get away from it at times and have complete rest.

THE COÖPERATION OF DIETITIAN AND PHYSICIAN.[1]

E. GRACE MCCULLOUGH.

It is in somewhat of a reminiscent mood that this paper is presented. The topic carries back exactly six years. In June, 1906, it was my great privilege to make a short journey with Mrs. Richards. The few days spent together were most helpful to me. Time and again have stray portions of our conversations returned with fuller emphasis, almost prophetic. Yet none more so than one question, out of which grew the short paper she later asked me to write for the next session of the Lake Placid Conference in September of the same year. The underlying thoughts embodied in that paper are not changed in the slightest. The sentences in regard to the dietitian which read, "She has a dignified standing"—"A changing yet brilliant future"—"The outlook tends toward specialization," are truer today by six years' test, than when they were first written.

We had been discussing the dietitian, her fitness for the work, her relative place in the institution and her future—then a silence—suddenly Mrs. Richards raised her head in that quick, alert manner which her friends remember so well, and said, "What are we to do with our domestic science graduates? They cannot all be teachers." "No, Mrs. Richards," was my reply, "nor can they all be dietitians."

If the same question were put to me today, the answer would be almost as brief, and certainly as emphatic—No; they cannot all be dietitians, and very few should be *hospital* dietitians.

Wherefore the qualifying of my reply? There are two fundamental reasons: First, The work of the dietary department in the hospital differs in several ways from that in any other institution. The food purchased and served must be reckoned for the sick as well as those in normal health. The ill are to be fed up to health, the well kept there; if possible, all are to be kept contented and happy. The teaching and training of the nurses in dietetics must be along special lines in addition to a general course. There must be maintained a definite,

[1] Presented at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

unequivocal position and a steady advance in the entire field. The standard should be continuously raised by the best practical methods which mean good financiering and frictionless institutional machinery.

A great part of the hospital's dietary department is concerned with ward work, whether the large open wards or the private ones. There are three phases of this ward work to be carefully supervised, the daily three meals, the regulation list of diets, and the special diets for which work every hospital dietitian should be conscientiously selected. This brings us to the second factor, the individual equation, or the fitness for the work, which counts so tremendously that it might be considered the hospital dietitian's largest asset. She can not grasp the full scope of the work at once. The road is narrow and long; never is it by ways of pleasantness where all the paths are peace. The work requires an enormous amount of enthusiasm to carry through the first twelve months, and this enthusiasm must be a personal distinctive force, the conscious power of doing the work the world needs.

The dietitian, at her best, is but a small part of large institutional machinery. To be paradoxical, she must lose herself in the work and at the same time find herself the recognized head of her department; where these two connect or divide, enters that God-given attribute, *tact*. The amount or variety of the work is not here exaggerated, nor are any of the requirements exceeded.

Ever and anon the question comes, What are the duties of a hospital dietitian? I might be facetious and say, All of her own, and some of everyone's else. And again, What must she know? There is absolutely no limit to the amount of knowledge she is expected to carry around, so systematically pigeon-holed within gray matter as to be on call for every questioner. She must meet the superintendent, the engineer, the butcher and baker, intelligently, and decide quickly for her department; pass upon the proper slaughtering of a pig; be asked in consultation regarding the prevention of the wholesale slaughtering of the innocent; know every stage of vegetable life from seed to seed again; be conversant with every phase of food, from the psychology of the intake to the bacteriology of the outgo, plus the chemistry for each change; she must compute the percentage of the money invested when reckoning the percentage of energy in the food involved; she must be as familiar with all the details of a laboratory as with the kitchens and able to hold her own with any department or line of work which touches the dietary department. Any—here let us pause—for out of this "any" appears the main point of divergence for the hospital

dietitian's work, making it distinct from all other. This point becomes the point of contact with the medical profession. What the dietitian makes out of this point, depends entirely upon herself. Trifles light as air determine the rise to full privilege, or rather fellowship, the post of honor, as first feeding—aid to the medical case after diagnosis—meaning, as the title selected for this paper—the coöperation of the dietitian and physician.

But, before we leave the worker and proceed to the details, we feel there must be sounded an additional note of warning to the prospective hospital dietitian. She must know, and those who train should be convinced, that specializing toward the pathological branch of the work, expecting only feeding in disease, that bedside and clinical duty are to be the chief duties, omitting all the practical courses which round out the student as a general dietitian, that such specializing will be absolutely futile. She must make good in every detail of the entire dietary department before she is recognized by a member of the visiting staff. All this is disillusioning. The trying out process frequently means being ignored.

There are two invisible barriers never to be overlooked by the dietetic aspirant which separate her from the consummation of the great desire to be called upon for "special service." The first is the jealously guarded "rights of precedence," and the second is the unwritten law of "professional courtesy." Should the dietitian take upon herself the initiative to break through these walls, she has committed a breach of professional etiquette, never condoned—having over-stepped, she is thereafter viewed with distrust. Could a list of "dont's" be handed to the youthful domestic science graduate as a warning against unknown rocks and reefs, a deal of unnecessary friction might be avoided.

To those enlisted in the ranks for hospital feeding this is a twice told tale and all too true, while for those entering the field it may seem too graphic and not true. Much depends upon the point of view. The dietitian works out her own salvation. We attract the conditions of our daily life by our attributes of mind, under seemingly purposeless acts there is always the strong current of personal inclination.

The main question at issue is, how to bring about the coöperation between such a "close corporation" as exists and the dietitian. Please do not consider me frivolous, if I say in many cases it appears to be just blind luck; the open sesame in too many instances, has hinged upon incidents that are not most pertinent to the gravity of the situ-

ation; in one instance, a goitre; in another, a good-as-dead Greek woman whose soul was more starved than her body; in another the grip of a strong right hand upon the trouser leg of a would-be suicide; and the honest "I do not know" of a senior interne; answered by "Well, go find out" from the "*great man*," have brought the dietitian within the inner shrine.

Many dietitians find the attitude of the "house staff" takes on color from the personal relations existing between herself and individual members which grow out of the fact that she also supplies their daily bread and it is not to their liking. It is not a cheerful atmosphere when some like pease pudding hot and others wish it cold. This pettiness, which although only a local condition, is extremely uncomfortable and discouraging to that particular dietitian, but will not have any general bearing upon the future coöperation as a whole.

Dietotherapy has come to the fore within the past twenty years, along with hydrotherapy and psychotherapy. They are not new, but history repeating itself, and anyone tracing through the centuries the rise and decadence of the various specialties used as "aids" in the course of the science of medicine, will find it most interesting. Realizing that the feeding by science is not new, the tremendous advance in all the sciences makes the present day methods certainly a new departure. The up-to-date physician is ever ready to avail himself of all the "aids" which are for the good, the rapid convalescence and life of his patients. Energy and time are limited and it is a physical impossibility to personally attend to details. The ancient practitioner who rolled all his pills and brewed his own elixirs, passed with the stage coach and the "old gray nag." Then came a drug prescription to the near-by drug store. Now the physician writes a prescription to the "hydro," one for the masseur, another for the psychologist, and why not for the dietist? It is no longer a question, but a fact: Food prescriptions are written with the same formality as one for the pharmacy; usually headed by the diagnosis in the upper right corner and ending with the number of calories (if desired) in the lower left corner, the quantities of fat, carbohydrate and protein designated in total grams for twenty-four hours, the entire fluid content estimated in litres.

These prescriptions reach the dietitian, who sees that they are divided into the required number of feedings, calculated, properly prepared, and promptly delivered from the diet laboratory. This is the first step, recognizing and appropriating the diet kitchen already

installed, which had heretofore been used only for teaching nurses the rudiments of invalid cookery and for making tit-bits for favored patients.

The wave of infant-feeding raged furiously and swept two continents. From the wreckage of numerous opinions, formulae, etc., there has emerged the child specialist, the milk laboratory and the special formula for the special infant. This formula is also written out after the manner of the other prescriptions and not numbered to fit the card but to suit the case. Pasteurization continues to see-saw—for and against—as the "Service" changes. The coöperation at this point is definite, the dietitian intelligently answers questions and assists in computing split proteids and determining coefficients—because few doctors care to do it and some internes do not know how.

The great white plague can be called the entering wedge to more cordial relationship than anticipated. Tuberculosis was the first disease which wanted, asked, and received all possible coöperation. During the flood-tide of "high protein" feeding which taxed the metabolism of the patients, the patience of the nurses and the ingenuity of the dietitian to the utmost, to say nothing of the strain upon the money bags of the state, city and individual, the physician and dietitian worked in accord, and when the feeding pendulum swung to the opposite extreme, the starvation diet rested heaviest upon her. When the rational middle mark was reached, the number of feeding cases had so increased, several hours each day were required to make bedside rounds.

Chronologically, following tuberculosis, the "true dietetic diseases" claimed unusual attention and careful selection of the food. Doctors everywhere are divided upon the subject. This or that "cure" supplants another without a fair trial, for diabetes, nephritis, other kidney troubles, and gastro-intestinal disturbances. The dietitian must certainly keep a middle line, yet know the details of each one, and her best judgment is called into play to supply the proper number of feedings daily in an acceptable manner, from a diet prescription which has no more food value sometimes than the paper on which it is written. With these diseases she is asked to suggest—and this is the highest coöperation thus far reached. Convalescence is gradually being shortened by different feeding during acute stages of disease and by careful fuel feeding after it is arrested. Calories are estimated up or down to the normal weight for the size of the patient. The feeding up of a case does not mean simply extra eggs and a few glasses of milk, the

feeding down not merely a reduction in bulk, but of intelligent elimination.

Having reached the present situation, the outlook for tomorrow suggests two alluring vistas for the dietitian: The first, she must continue to specialize and eventually will occupy a position as head with oversight of the executive division of the dietary department, a position similar to those of the pathologist, chemist and pharmacist, on call and for consultation; the other, that of dietist at large, with office hours and a round of visits to patients coöperating with the private physician. I may not see it, nor you, but it is coming.

Rather than summarize the foregoing, I will quote directly from Dr. William F. Boos' admirable paper, published in the *Boston Medical and Surgical Journal*, 1910:

> Dietitians have come to be as necessary in a modern hospital as the visiting medical staff itself. The demand for this profession must be met. At present it is a woman's work, waiting for her and offering fine inducements to her. If there are no women available—and I fear there are not many—it will not be long, in these days of over-crowded professions, before men will add dietetics to the list of callings for men, and women may realize too late what an opportunity they have lost, in part at least.

THE RELATION OF HOUSEHOLD ADMINISTRATION TO PUBLIC UTILITIES.[1]

MARTHA BENSLEY BRUÈRE.

So far, the Conference seems to have agreed upon one thing, that practically all the problems of household administration resolve themselves into problems of service.

Not long ago the dean of women of one of the western colleges which has a large domestic science department told me that she was afraid that we were making domestic science a fad;—paying so much attention to it that it was getting in the way of culture. Now, from the very beginning of time we have devoted attention to domestic science for the sole and only reason that it should get *out* of the way of culture.

Mrs. Bruère evidently considers it high time that our women should realize their relation to the larger world of business, to awaken to their power as consumers over all departments of public service. This power depends on their ability to work together. It would be most interesting to discuss the methods of reaching these ends and we shall be glad to print correspondence from our readers on the subject.—EDITOR.

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[1] Presented at the Lake Placid meeting of the Administration Section of the American Home Economics Association June 1912.

That was why the problem of service originally came in. The domestic servant got the work of the household out of the way of her mistress' culture.

I have just been visiting in a little Indiana town within a stone's throw of the Wabash River. It has 526 inhabitants and there is not a servant in the place. It has, however, an academy with a domestic science department, the equipment of which I was permitted to inspect. That department is based on the use of the coal stove, and owns one of the best, most complete, most energetic coal stoves I have ever seen. It has no fireless cooker, no power-run washing machine or bread mixer, no equipment of any sort which could not be put into immediate practical use in this town which has neither electricity, gas nor water power, although the Wabash River, many horse power strong, runs by in idleness. The domestic science school has accepted absolutely the limits of the town and bases its teaching, not on what it would be possible for the town to have, but on the things of which it is already in possession. There is no course in this school which even aims to teach students how to make that Wabash River into the common servant of the place. As a result both of the domestic science instruction in the academy, and of the naturally industrious and painstaking disposition of the women, the homes of that town are swept and garnished, the clothes of its people are spotless and the food on its tables is abundant and perfectly cooked. The women are good housewives. But the streets are unlit and unsprinkled, the library of the academy, which is open to the public, is practically unused, and the women's club is inert. How should they be otherwise? The need of this perfect housekeeping and the taste for it take up practically all the time of the women. There are no servants for them to rely on and the management of their homes stands between them and culture, while the Wabash River, which might free them for the civic work of getting the town streets lit and sprinkled, attending the women's club and reading the library books, has never been made to do its duty.

A few weeks earlier I had visited a Wisconsin town of about the same size which was a great contrast to this Indiana one.

"Do you have electricity in your house?" I asked one of the women at the women's club.

"Of course," she said.

"Don't you find it very expensive?" I asked her.

"Well, it does cost a good deal now, but when we get our plant

paid for, it will be cheaper than any fuel that we could have—oh, yes, we use it for cooking and lighting and running the washing machine. You see, the town has put in the plant and it costs now almost as much as you would have to pay in the city, but that is only until we get it paid for."

The women of this town presented a large and energetic delegation to the joint meeting of the Wisconsin women's clubs. They reported that their town had lectures on civics, a new depot and schoolhouse and were evidently taking an active interest in the village government. They had time! They had absolutely refused to accept the limits of their town. They had made a public utility their domestic servant and had thus put housework out of the way of culture.

It was in only a few places that I have found domestic science teachers recognizing their responsibility, not only to teach their pupils how to use the materials and equipment already at hand, but to provide themselves with the best that science had devised—teachers who recognize that it is part of housework to create and manage the public utilities which have taken the place of domestic servants. This problem of the management of public utilities by the housewife is not alone a country problem or a small town problem. It is even more a city problem, for in the large cities, although the public utilities exist, they are put out of the reach of most of the people by their high charges. Take electricity for cooking, for instance. The public schools of Chicago do not teach cooking on the electric stove, not because Chicago is without electric current, but because it costs ten cents a kilowatt hour, a price which puts it beyond the reach of ninety-nine out of a hundred housewives in the city. And yet the people own through the Sanitary District of Chicago the drainage canal which has 125,000 horse power going to waste. The children are not taught how they can control this power which belongs to the people, how they can turn it into electric current and use it in the city kitchens at a price which makes this best fuel of all what it really is—the cheapest thing for household use. In the case of Chicago, the public utility servant is already created. It is not controlled.

In this situation, which exists in most of the large cities, there are three things to do. First, the one that is taught by the schools and the magazines and which amounts practically to a boycott; that is, we are told that we must use some cheap substitute for the thing we want. The magazines give recipes which will take the place of things cooked with eggs. The schools advocate milkless puddings and the

creamless oatmeal, and tell us how to make near-cake, and what can be substituted for meat. In general, they teach the pernicious doctrine of getting along with less instead of finding ways to get more. They advocate a sort of inverted evolution, which if persisted in, would send us like crabs backward along the slow path of civilization. The second method is even worse. It is the method of doing the work of the public utility for it, saving its bones and muscles and tired back, as it were. I saw not long ago a magazine advocating the home making of soap, because it was cheaper. There is hardly a woman's page in the country that does not advocate home-made garments because they can be made at a less price than the factory will furnish them. The New York *Times* a few days ago printed a laudatory article about the graduating class of a Broome Street grammar school, all of whom had made their graduating dresses at a cost not to exceed $1 apiece. The *Times* went on lightly to say that these dresses would have cost $30 in a store. Well, in that case, the *Times* probably did not know. The dresses might have cost $5 or $6 in a store. Now, far be it from me to lessen the advantage from the standpoint of culture, of these girls learning how to sew and cut and make their own clothes. It is probably just as great a development of the mind as to learn the tables of weights and measures, and it also gives them a small amount of manual dexterity which is valuable. But would it not be more worth while to teach them how to find out why the readymade dress costs five or six times as much as the one they make themselves? If they are paying their servants, the manufacturers, too high a price, ought they not to know it? That is the third and best way to control the public utilities—to cut down the wages we pay them. And the thing is no dream, because it has actually been done.

Take the Consolidated Gas Company of New York City that used to charge, some five or six years ago, $1 per 1000 feet of gas. I was living in the New York ghetto when the campaign for 80 cent gas was on. Twenty cents difference per 1000 feet of gas in the ghetto where there is no storage for coal and where practically all cooking and heating operations depend on gas, is a very serious thing. The candidates of all the different political parties used to speak from soap boxes under our window, and whenever one of them said 80 cent gas, the crowd that blocked the streets would cheer, while the candidate who did not mention it was listened to in silence, and as a result, the 80 cent gas ordinance was put through. The Company immediately

set up the claim that they could not manufacture and sell gas at 80 cents, and that a law requiring them to do so was confiscatory, and therefore unconstitutional. It was carried up to the Supreme Court in the case of Wilcox vs. The Consolidated Gas Company, and the Supreme Court found that 80-cent gas would yield a 6 per cent return on the investment, and decided that 6 per cent was not confiscatory.

This case was important, not because it fixed the price of gas for that city, but because it established the principle that the people have a right to determine the pay they will give their servants, the public utilities.

Boston has put in practically the same ruling in adopting its "sliding scale" which fixes the dividend its gas monopoly can pay at 7 per cent, but allows them an increase of 1 per cent on its dividends for every 5 cent reduction in the price of gas. The regulation of the street car fares in Cleveland was a recognition of the same principle.

Of course it may be argued that only a few of the things with which the housewife directly deals are public utilities, on the basis that to be a public utility a company must have a franchise to use public property. But Judge Waite of the United States Supreme Court has enlarged the significance of the public utility by saying: "Property does become clothed with a public interest when used in a manner to make it of public consequence and affect the community at large. When one devotes his property to a use in which the public has an interest, he grants to the public an interest in that use and must submit to be controlled by the public for the common good."

Under this decision, would not the milk combine, the beef combine, the National Biscuit Company, and all the various purveyors of food and clothing and fuel and building material, be considered public utilities, and therefore servants of the home and to be controlled by the house wife?

It seems to me that any domestic science teaching which takes as a basis of calculation the existing price or rarity of a thing and considers it as final, is missing its best chance, for if, as the previous speakers have said, the problem of Home Economics is ultimately a problem of service, then it is the function of the house wife to control this service, whether it is a service by human beings, by machines or by public utilities. The underlying idea of domestic science teaching should be not only to make the best use of what we can have under existing conditions, but to show how we can change existing conditions so that we can have what we need.

SCIENTIFIC MANAGEMENT IN THE HOUSEHOLD.[1]

FRANK B. GILBRETH.

Housekeeping is an industry which embraces a variety of activities and, like all other industries, it can be well managed or badly managed. The saving of strength of the housekeeper, the finding of time for rest and recreation, as well as the right use of money expended for the household, depend in a large measure upon the skill of the housekeeper and her efficiency as a manager and as a worker. It would seem that principles that have proved of use in the scientific management of commercial industries might have an application to the business of housekeeping. In this paper, the practices as applied to commercial industries, are set forth with the hope that housekeepers and teachers of home economics may be able to apply them at least in some measure to the solution of their problems.

PRINCIPLES OF SCIENTIFIC MANAGEMENT.

There is undoubtedly a considerable waste of time, energy, and money, resulting from imperfect organization, or from the absence of organization, of the work of the household. Application of some of the principles of scientific management would tend to reduce and even to eliminate this waste.

In all organized work there are two plans of management. The first of these represents what is variously known as military or traditional management. Under this plan, each man is responsible to one man only above him, and is in charge of all below him. Thus, it is the custom for any man to come in contact with only one man above him, the line of authority being single and direct. Traditional management has been used for centuries in military organizations, and has also been used many times in religious organizations and political organizations. The division is by men, by grades of men rather than by functions. This plan is illustrated by figure 1.

Figure 2 represents functional or scientific management, or what would be called, but for objections by Dr. Taylor, the Taylor system of

[1] Presented at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

management. Here the division is by functions. The first functional division is the separation of the planning from the performing. Graphically, this separation is represented by the horizontal line. All functions above this line are of the planning, all functions below this line are of the performing. Note the functions shown on this chart, namely four functions in the planning and four functions in the performing. Note also their relation to each other, and to the individual worker.

This chart shows one such worker represented by the lowest circle. There could be no objection to representing each individual worker by such a circle, but the relation of each such worker to those over him is exactly the same. Hence, the lowest circle is typical.

It will be noted that the worker receives orders directly from eight different foremen. It has been said that no man can serve two mas-

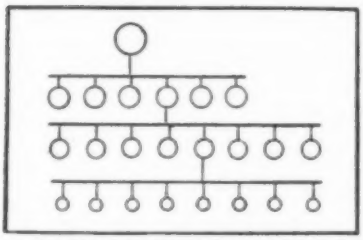

FIG. 1—Diagram illustrating the principle of Traditional or Military Management.

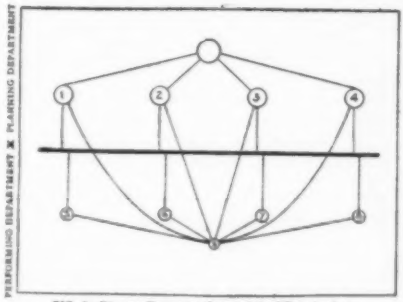

FIG. 2—Diagram illustrating the principle of Functional or Scientific Management.

ters, and this is true even in scientific management. But under scientific management the worker does not serve eight masters, nor eight functional foremen, but, on the other hand, he receives help from eight different foremen or teachers. In this way, his case is not very different from that of the student who receives instruction from eight different professors, in eight different studies.

The four functions in the planning department are represented by (1) route clerk and order of work clerk, (2) instruction card clerk, (3) time and cost clerk, and (4) disciplinarian.

Although in this presentation each function is represented by a person, each function may be represented by any number of individuals, or one individual may perform several functions, according to the kind of work, and the conditions necessary to eliminate all possible waste. Each one of these four men of the four functions in the planning

department, is supreme in his respective function. All deal directly with the worker, and all deal directly with the four functional foremen who are in the performing department.

Of the performing department we have four functions represented by (5) gang boss, (6) speed boss, (7) repair boss, and (8) inspector.

These functions, like those of the planning department, are represented by as many men as the nature and amount of work justifies, or two or more functions may be represented by one individual. All such representatives deal, as the chart indicates, directly both with all the individuals in the planning department, and with each individual worker.

The duties of the man handling each function will now be explained.

Route Clerk.

The duty of the route clerk is to plan in advance the path of each piece of material, worked and unworked, as it passes through the shop or as it is handled by each and every member of the organization who has anything to do with it. He is to decide the three dimensions of the path, and the route that the material is to pass through, whether it is to go to the stores or into temporary storage piles, or directly through the shop as fast as it can be moved. His function is not simply to look after the details of the moving, but broadly, to determine the entire transportation career of the material. For example, in building operations, he would determine where the car was to be placed to be unloaded, where the material was to be unloaded, when it was to be moved into the building, and exactly what path it would follow across the floor, up the elevators, and to its final resting place.

Often the route clerk is able to greatly simplify the path of the materials, especially on large orders, by a rearrangement or routing of the machinery. The route clerk's duties, also, oftentimes consist of demanding a new path, that is, ordering that machinery not used be removed, so that he can route his material by a more economical method. After he has determined the exact path by which the material shall be routed, he embodies his conclusions in route charts and route sheets; these illustrate his orders graphically, and are worked out in detail by the instruction card department.

The Instruction Card Clerk.

It must not be supposed that the instruction card function consists wholly of the work of actually writing out the instruction cards. This is the name of the function in general, and this function may be handled by several men of different capacity in the instruction card function, that is to say, the department may be divided into subfunctions. It is the duty of this function to work out in detail, that is to say, to devise and construct an instruction card for each element of the route sheets and route charts. The instruction card department must furnish in the greatest detail possible, such directions as will show two different classes of men their duties, namely:

(a) The worker, who must know how to perform the particular work shown on the instruction card.

(b) The functional foreman in the performing department, who must know exactly what he is to see that the worker does perform, and exactly what he is to teach the worker in order that he may so perform his work as to conform to the instruction card and to satisfy the man who made out the card.

The Time and Cost Clerk.

After the worker has performed his work, a return of the time that it took him to do his work, together with its cost, goes to the time and cost clerk, who figures out the payroll, the bonuses, and the cost of performing each task.

The Disciplinarian.

He is the man who handles all matters in the entire organization pertaining to disciplining. He must be a broad gauge man who is able to keep peace in the organization; to anticipate and prevent many disagreements and misunderstandings before they actually occur, and to arbitrate or judge fairly such disagreements as actually take place.

The Gang Boss.

The gang boss is not the type of man represented by the "bucko mate" of the vessel of former days, who boasted that he could lick any man in the entire crew, and often did so for no other cause than to prove his words. He is now a man who can teach the worker the methods shown on the instruction card. His duty is to see that the

worker preforms the work required exactly as called for, and of the prescribed quality shown on the instruction card. In order to get his best work and to enlist his zeal, it is usually necessary to pay him a bonus for each and every man under him who in turn earns his bonus, and a double bonus if every man in his gang earns the bonus. For example, suppose the gang boss received $3.00 per day, and had twenty men working under him, he would be paid, say, in round numbers, approximately 10 cents apiece for each man under him who received his bonus; and, if all twenty of the men received their bonus, he would receive a double bonus of 20 cents apiece for the entire gang.

It is evident that such a plan of management as this will bring out coöperation as would no other plan, and it may be stated emphatically that only the hearty coöperation of the men will bring out good results from Scientific Management and the economies that it is possible to effect by it.

Speed Boss.

The speed boss, regardless of the popular impression as to his duties, does not speed up the men, in fact he has very little to do with speeding the men. His duty is to see that the machinery moves at the exact speed called for on the instruction card. Evidently some one speed is more desirable than any other; for example, the speed of a buzz planer or a circular saw is very dangerous when it is too slow, while on the other hand, the speed of a fly-wheel of an engine is very dangerous when it is too fast. The one that is the most desirable and safe is the speed that the instruction card man attempts to set on the instruction card, and it is the duty of the speed boss to see that the machinery runs at all times at exactly the prescribed speed. He not only shows the worker how he can make his machine run at the speed called for, but, if there is a question as to its being possible to run at this speed, he must be prepared to teach the worker by doing the work himself, or provide a man who can comply with the requirements of the instruction card.

Repair Boss.

The next function is that of the repair boss. His duties consist principally of carrying out repairs and overhaulings, such as are called for on instruction cards that are given to him at regular, predetermined intervals. In this way breakdowns, as far as possible, are avoided. The repair boss, however, must be a resourceful man, prepared, in case of emergency, to jump in and repair any such breakdown

as may occur, even in the absence of precise directions or an instruction card.

INSPECTOR.

His work is decidedly different from that of the inspector under the old type of management; for example, his inspection must result in constructive criticism, not destructive criticism. It is his duty to see that the material is rescued when it is not handled, or worked exactly as called for on the instruction card.

Many times, under traditional management, the inspector comes around after the work is done, condemns it, and walks away, leaving it to others to see that the work is taken down, and perhaps, carted from the premises. Under Scientific Management the inspector is required to stand near the worker when he is handling a new piece of work for the first time, in order to see that he thoroughly understands his work as it progresses. Thus the material is not spoiled. If the worker has a task of, say, fifty pieces, the inspector inspects the first piece most carefully, to make sure that he is satisfied that the worker knows exactly what he is to do, how he is to do it, and the quality prescribed by the instruction card.

THE WORKMAN.

As for the individual worker, it will be seen that he receives not only an instruction card telling him what he is to do, how he is to do it, how fast he is expected to do it, the prescribed quality with which the work must be done, and how much pay over and above his usual day's wages he will surely get if he does all that is called for on his instruction card, but also, he receives personal teaching. The gang boss acts as his teacher constantly; the speed boss he can call on at all times to assist him with the speed; the repair boss coöperates with him to see that his machine is constantly kept in such repair that he can earn his bonus, and the inspector will also teach him at any time, and show him wherein he is making a deviation from the quality called for. Moreover, the functional foremen in the planning department are ready, at call, to explain their instructions. Thus he has every help that is possible to enable him to earn the exceptionally high wages that are offered for Scientific Management. He is assured of the "square deal" from the foremen who are over him, and he always has the same opportunity to appeal to the disciplinarian, in case he is not being well treated, that a foreman would have in case the worker

was not doing his work as well as he could do it, or was not trying to coöperate with the other workers.

Having shown the principal functions of Scientific Management and their relation to each other, and to the individual worker, Motion Study will now be considered.

The three most obvious economies to be obtained by Motion Study would be to use (1) the fewest motions, (2) the shortest motions, and (3) the least fatiguing motions; but these, however, are but a small part of the list of savings that could be obtained.

For example, in one organization, for over twenty years, a certain man's duties consisted of doing work that required his hands to be within 6 inches of the floor on which he stood, practically all day, except when he was resting; this man was probably about 6 feet 6 inches tall. On the other hand, in the storage department, a very short man was piling cases in a pile about 7 feet high. Here was clearly a failure to select the man best adapted to the kind of work to be performed.

Motion Study is a part of the function of the planning department. It is here necessary to go back a little way and see what it is that the instruction card man is supposed to do. His duty first of all is to devise a way that is the most economical and the least wasteful of all ways that can be devised, and the nearer he can get to perfection the better he is in his function. The nearer his method is to perfection, the more scientifically can rates be set. It must be remembered that under Scientific Management the rate is never cut. Any manager who is familiar with the evil by-products of cutting the rate on piece work will readily understand the tremendous benefits that accrue from any system where the rates are so fixed that not only the rate need never be cut, but that there is no incentive to ever cut the rate. Cutting the rate results in scientific loafing, which is quite the opposite of hearty coöperation, and without hearty coöperation high wages to the workman and low production costs to the employer are impossible.

Motion Study is so intimately related to time study that it is quite difficult to specify exactly where one begins and the other leaves off. Perhaps the best way to describe it would be to say that Motion Study is for the purpose of seeing that the process is right, and time study is for the purpose of determining how long each element of the process will take, and how much time must be devoted to rest for overcoming fatigue.

Motion Study theoretically is supposed to furnish measurable units for time study, but the units are so small that they have not, until recently, been timeable. It is expected that a mechanical device for this purpose will be on the market very soon, capable of timing the motions of a workman very accurately.

Teaching of right motions should precede teaching of quality of output. All thought of quality should be neglected temporarily for the sake of acquiring great precision of right motions. Hitherto, failure to recognize this fact was due to lack of knowledge of the right motions. Ordinary stereoscopic and motion picture photographs now permit the recognition, separation, and measurement of the various motions with great accuracy, and the results are quicker teaching, automaticity of motions, habits of right motions, and less fatigue and less percentages of fatigue. These all permit much faster motions.

There are a great many other reasons why motions should be standardized, and if they are standardized, it goes without saying that the motions should be the right motions. One of the reasons for taking great care in standardizing motions is that it reduces enormously the amount of time study that must be taken, and time study is at best an expensive and somewhat tedious process. It is more important to have a standard method for each process early, than to have the best possible methods; however, it is, of course, desirable that the standard process shall be built up from the best known motions at the time that it is standardized.

There are many variables that affect the motions, and one or more of these may make it necessary or advisable to completely eliminate motions which were considered essential before due consideration was given to the variables. The list of variables here given, by no means complete, may preferably be divided into three classes: (1) the variables of the worker; (2) the variables of the tools, equipment, appliances; (3) the variables of the motion itself.

Variables of the Worker.

Anatomy, brawn, contentment, creed, earning power, experience, fatigue, habits, health, mode of living, nutrition, size, skill, temperament, training.

Variables of the Motion.

Acceleration, automaticity, combination with other motions and sequence, cost, direction, effectiveness, foot-pounds of work accomplished, length, necessity, path, play for position, speed.

VARIABLES OF THE SURROUNDING EQUIPMENT AND TOOLS.

Appliance, clothes, colors, entertainment, music, reading, heating, cooling, ventilation, lighting, quality of material, reward and punishment, size of unit moved, special fatigue-eliminating devices, surroundings, tools, union rules, weight of unit moved.

The object of Motion Study is to discover perfection and to perpetuate it automatically.

Scientific Management has been extremely slow in making an advance in the industries and the principal reason for this is that the scientific managers have been obliged to train their own men. There is no school at the present time that has sent out young men who were familiar with even the vocabulary of Scientific Management.

After determination of the right motions, the right times for the motions, and grouping them into cycles of elements, of subdivisions, of processes, the next step is determination of the amount of rest required for overcoming fatigue. The result is the standard task for the standard man.

It is necessary here to explain the terms "standard man," "first-class man," and "given man." While motions and the time of motion have been determined by observation of the best men procurable, it is to be expected that other men will be obtained who will be as good as the best man picked out for this purpose. The first-class man is the man who is best adapted to this particular work; that is to say, the best man adapted to do this work continually and thrive. The first-class men are obtained from the given men. Some find that they cannot do the work, and either become discouraged or are assigned to other work before they get discouraged. Many people think that the hard task makes an unwarrantable hardship upon the worker, but this is not so, for Scientific Management contemplates having each man work at the highest class of work for which he is mentally and physically and by experience able to work at continuously and thrive. The interdependence of all the men from the individual workman to the highest man in the planning department is so noticeable that it is necessary that only those men are picked out to do the work who are capable of doing it so as not to delay those that follow in a dependent sequence of operation. If an inefficient man who could not be depended upon to do a certain predetermined piece of work were permitted to work at a place where he failed to perform his task day after day, he would prevent all those men who follow him from earning high wages;

therefore it would be unfair to the other men to permit any man to work at any task which he could not perform continuously and efficiently.

Now that there is so much literature on the subject of Scientific Management, why is it a fact that the progress of the study has been so remarkably slow? The answer to this question is that many people who are thoroughly familiar with the duties of the men and the various functions are not familiar with the pitfalls that are ever present in its installation. The entire scheme is dependent upon the hearty coöperation of everybody in the organization, and workmen everywhere have been deceived so many times in the past that they are naturally suspicious that this Scientific Management is nothing more nor less than a new fraudulent confidence game presented to them in a more deceptive form than they have ever seen, and they believe that it is for their best interests to smother it while it is still young.

On the other hand, there never has been a case where Scientific Management has been properly installed, that all the workmen did not realize that it was much better for them than any form of management that they had ever seen. Now that there have been many successful demonstrations of Scientific Management where the workers receive much higher wages than ever before and where the costs of production are lower than ever experienced by manufacturers before, it seems extremely unfortunate that the terrible wastes that are going on where Scientific Management is not in operation should continue, and it is hoped that universities and other institutions of learning will consider seriously the study of Scientific Management, not only for the education of the young men who are going out into the world as engineers, but also with the idea of establishing permanent stations for the collection of Motion Study and time study data, in coöperation with the universities and with the national and state governments.

The problem is too great for any one firm, corporation, or college; in fact, this is work in which all English speaking nations should unite as they have already done in investigations of matters pertaining to medicine, agriculture, and the animal industries. Much good would come from the establishment of an international bureau for the study, collection, cataloguing and dissemination of data relating to Scientific Management, through the amelioration of the condition of workmen of all countries, and the elimination of unnecessary waste.

REPORT OF THE COMMITTEE ON UNIFORM ACCOUNTING FOR INSTITUTIONS.[1]

The membership of this committee was intended to include representatives of various types of institutions and various aspects of institutional work. The committee has had a progressive, rather than a constant life, for the membership has been enlarged as various phases of the work were attempted and advice upon them became necessary. Besides the chairman, the following, in the order of service, have had a part in the work of the committee: Miss Olive Davis, director of halls of residence, Wellesley College; Dr. Frederic A. Washburn, Jr., superintendent of the Massachusetts General Hospital, Boston; Dr. Roland H. Harris, member of the board of trustees of the Battle Creek Sanitarium; Mr. John L. Taylor, assistant comptroller of Harvard University, and treasurer of the Symmes (Arlington, Mass.) Hospital; Miss Florence Ruth Corbett, dietitian at Teachers College, Columbia University, and consulting dietitian for institutions; Mr. Edgar A. Fisher, purchasing agent of Earlham College.

This gives the committee, counting some members in more than one capacity when their work has more than one aspect for the purposes of the committee, four representatives of hospitals, one representative of a sanitarium, four representatives of the food-and-shelter aspect of colleges, three representatives of the teaching aspect of colleges, and two accountants. Mr. Melvil Dewey of the Lake Placid Club has given the committee much help, particularly in the consideration of problems of clubs and hostelries.

A complete plan for uniform accounting would require a large volume for exposition and illustration. So many differences occur in institutions that doubtless fifty modifications of any uniform plan would be required even for the institutions represented in this conference. Uniformity of detail is not really uniformity at all, for details must differ where conditions differ; otherwise one cannot know that conditions are different, and the accounts will misrepresent the facts. What we mean by uniformity is uniformity of method—so that the same situation will be disclosed by the same figures, and differences of situation

[1] Presented at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

will be disclosed by differences—and concomitant differences—of figures.

For these reasons your committee has thought wise to recommend the adoption of certain principles that it believes essential to any sound accounting—whether for immediate costs, for studies of efficiency, or for purposes of comparison, either within an institution or between institutions.

These principles may be stated concisely as follows:

1. Capital accounts, so-called, should be kept for all permanent property and equipment—and that means a capital account for each department of the institution. The purpose of these accounts is to show not what the property is worth today for sale purposes, but what it represents in the way of cost, or investment, for the institution. These accounts indicate how much of the funds entrusted to the institution have been and are now locked up in permanent form. It is assumed that either the property has been maintained at its original efficiency or depreciation has been subtracted from the original cost and charged as operating cost, or expense.

If in any institution the records of cost of permanent equipment have not been preserved, a fair valuation of the property for use purposes (not for *sale* purposes unless early sale is contemplated) should be made. This valuation should have regard to three things—the cost of new equipment to do the same or substitute work, the probable life (or period of usefulness) of the old equipment, and the comparative efficiency of the new and the old. The important fact is to recognize the principle of valuation, for several things hinge upon it—as will appear in the discussion of other accounts.

The only objection to this plan is the fear that jealous citizens may agitate for taxation of tax-exempt institutions, or philanthropically-minded persons may grow tight-fisted if they learn how much property institutions hold. The committee believes that even under such circumstances the figures should be kept on the books, but it may not be wisdom to publish them. On the other hand, a campaign of education may sometimes be profitably conducted by showing how big an investment is necessary to make possible the conduct of a proper public service. Greater contributions may result.

Directly related to these capital accounts are four, sometimes, five, operating or expense accounts, and these should be kept separate for each department. These give us the following:

2. A maintenance account should be kept for each department.

This should show all expenditures for repairs and replacements to keep the property in its original efficiency for service. The sum of these is an operating cost. If the property has been more than maintained, so that it has greater efficiency, or longer life, than before, the cost of the excess of service-value may be charged to the capital account of the department.

If, on the other hand, repairs and replacements have not kept the property up to its old efficiency, this exhaustion of value is still one of the operating costs, or expenses, and must be counted. So far as cost, or expense, is concerned, it makes no difference whether one has replaced the wear and tear or not. The cost is the wear and tear itself. For convenience, we call the cost of restored wear and tear "maintenance," and actual (not restored) wear and tear we call "depreciation." A valuation, as already indicated for the capital account, assists in the annual answer to the question, has the property been maintained? This is to be determined for a department as a whole, and not for each item of property—table leg, or sheet, or instrument. If the property and equipment of the department as a whole are as efficient (looking into the future, i.e., at durability, as well as at the present) as they were at the beginning of the period for which the books were made up, the property has been maintained and no depreciation need be considered. The cost of that maintenance is the charge to maintenance account. If, for an absurd but simple example, a building were so constructed that one-tenth of the cost were in the roof, one-tenth in each of three floors, one-tenth in each of four walls, etc., and it were good for ten years only, and you replaced the roof one year (though the rest depreciated), and a floor another year (though the rest depreciated), and so on, there would be no actual depreciation. You might go on in this way for a thousand years, always with a building as good as it was at the end of the tenth year, with correct showing of values and of costs; for though each year nine-tenths were allowed to depreciate, the tenth-tenth would be entirely replaced and charged to maintenance; and that would be as good, and indeed practically far better, than replacing one-tenth of the walls and of the floors, and of the roof, each year.

3. A depreciation account should be kept for each department; for, as just indicated, when depreciation has occurred, it must be counted as a cost; otherwise a superintendent or manager who exhausts the equipment will be showing low costs. Depreciation must also be deducted from the capital value of the property.

4. An interest account is desirable for each department. Each

department should be charged interest on its equipment. This sounds like paying the left pocket from the right—like playing with figures. Yet only so can we know whether equipment is profitable. Expensive equipment may be put in to save labor; but no institution has a plethora of funds, and money spent for permanent equipment cannot be used for current accomplishment. If departments are not charged interest on their equipment, they are left with temptation to save a dollar in wages at the expense of two dollars in interest—for wages always show and the interest (in that case) will be hidden. Even if money is plentiful, neglect to charge interest will represent conditions unfairly in a comparison with other institutions unless actually the same proportional investment has been made in the various departments.

Obviously a valuation, as suggested for the capital account, is necessary for the calculation of interest on equipment. The rate of interest must be determined by local conditions. For our purposes, the important things are merely two: first, the recognition of the principle of interest as a department cost; second, a statement, in the published report, of the amount of interest charged to each department and of the *rate used*.

5. Departments should be charged for insurance on their property for the same reason that they should be charged interest. The use of property involves the cost of insuring that property, and a department unwilling to bear the expense should not be granted the right to purchase.

6. If taxes are paid, they should be charged to each department in the ratio of the value of the property held.

Obviously only when valuations of property are preserved on the books can one apportion insurance and taxes to the various departments.

So far we have been concerned only with direct costs—costs for which we know or can easily tell how much belongs to each department. Besides those just considered are the obvious items of salaries, supplies, express, stationery, printing, etc.

Your committee recommends that at least four joint costs—or costs common to several departments—be distributed among the departments concerned. These follow:

7. Food—including supplies, cooking, and serving—should be charged to departments separately. Food cost should be distributed among the departments and should be charged to each on such basis

as in each particular case will show the actual cost to the institution of food consumed by employees "living in." Only when this is done can one tell whether "living in" is cheaper than "living out," and only then can one compare institutions operating under different conditions.

When different types of dietary are served to different classes of guests, inmates, or students, the food costs should be kept separate for each.

8. The cost of dormitory or sleeping provision should be determined for each department. This should be charged to the departments on the basis of space occupied and service rendered for sleeping accommodations for its employees. The chief items so to be distributed are rent, heat, light, laundry, and care of rooms.

9. The cost of laundry should be charged to each department. This is meant to cover both laundry used by the department itself, as operating-room laundry in a hospital, and laundry of employees of the department.

10. Department housing, or space-cost, should be charged to each department. This includes rent, light, heat, cleaning, etc., for the quarters used by the department for the conduct of its business.

Your committee recommends that in some cases two items be subdivided within departments, as follows:

11. The subdivision of pay roll in some departments. When several classes of employees, serving different functions and receiving various rates of wages or salaries, are employed in any department, their salaries should be subdivided in such fashion as to make available statistical comparisons or cost figures for the different classes of work. In a hospital, for example, wages of graduate nurses, of nurses in training, and of orderlies, though all in the group of cost of care of patients, should be separately reported.

12. Subdivision of supplies in certain departments. These should be divided into classes whenever such subdivision will give statistical information of value. Such information is the relative consumption of meat, of fish, of dairy products, of cereals, etc., under different conditions, and the cost of dietetic substitutes for any of these.

The above twelve recommendations are made by unanimous vote of the members of the committee present at this conference. Dr. Washburn,* who was unable to be here, has expressed personally to me his approval of the principles involved; but he has not had opportunity to see them expressed in this form. Miss Davis* has been abroad

*Since the meeting, both Dr. Washburn and Miss Davis have given the report their full endorsement.

for some time, and has not seen this formulation, but has expressed her approval of most, if not all, of the principles.

Respectfully submitted,

for the Committee

WILLIAM MORSE COLE, *Chairman.*

Forms were then shown indicating how it is possible to keep record of the board cost, laundry cost, etc., chargeable to the various departments without burdening either the clerical force or the books unduly. The special expense ledger was roughly described. All the forms and accounts, with discussion of their purpose and use, required to carry out the recommendations of the committee, are in preparation for the printers' hands, and will be published in book form. For these, however, the chairman is alone responsible, for the committee confined itself to the general principles and was not able to extend its activities to cover the vast field of details; nor is it possible to print them here.

In actual practice, the effort to keep all the details indicated in the report of the committee is not nearly so great as appears; for by means of a special expense ledger, which has been devised to accompany this plan, comparatively no more labor is required to keep a hundred accounts than is commonly put on twenty. The list of accounts below, therefore, is not really at all formidable. Since, moreover, each account has a mnemonic symbol, virtually an unmistakable short-hand equivalent, the task of making memoranda is slight. An outline of the accounts, with indication of their content, follows:

CAPITAL ACCOUNTS FOR INSTITUTION PROPERTY.

Administrative Equipment

Includes office equipment, such as desks, calculating machines, typewriters, telephone switchboards (if owned), etc.

Special Equipment

This is intended to cover one or several items according to circumstances. In hospitals, *e.g.*, it may comprise seven items, each representing one line of activity—as operating room, dispensary, X-ray room, ambulance, etc.; in schools and colleges it may comprise items for class-room equipment, for libraries, for museums, for laboratories, etc.; in clubs and hostelries, items for stable, for garage, for golf links, for tennis courts, for boats, etc.

Dormitory Equipment

This should include all equipment for bed rooms, dressing rooms, and other rooms such as private bath rooms used for private purposes. It should include not only furniture, but linen and crockery.

Table Equipment

This should include not only table furniture, but linen, crockery, and glassware—but not cooking equipment.

Household Equipment

This should include all general furniture in halls, reception rooms, public bath rooms, etc., and all equipment for general household use (not for cooking, serving, or laundry), such as vacuum cleaners.

Kitchen Equipment

This should include cost of ranges, steam tables, boilers (for cooking), ice chipping machines, potato parers, cooking utensils, etc.

Laundry Equipment

Steward's Equipment

Storage refrigerators, scales, trucks, etc.

Machinery and Tools

This should include machinery and tools for general purposes, as boilers, engines, motors, ventilating fans, and mechanics' tools.

Building and Improvements

This is kept less as an indication of valuation than as an indication of the cost to the institution of its property in excess of the native value of the ground. Hence it should be debited for the cost of the "improvements," commonly so-called, including plumbing and steam fitting.

Sites and Grounds

This should register the cost of the land alone.

EXPENSE ACCOUNTS.

The letter in the left margin indicates the method of handling the account. G shows that the account represents a group of smaller accounts, and that normally entries are made to the group account only in lump sum, once a month. P (primary) indicates that entries to these accounts are made in the usual way; but by the provision of a special expense ledger and cash book, postings to these accounts can be reduced to a few each month. S (secondary) indicates that the account is used only as an ultimate destination for transfers, and that therefore entries are unlikely to be more than two or three a month.

Administration.

G Administrative Service

This group covers compensation for those engaged in general administration, and includes all services rendered for them in the way of compensation, such as board, rooms, and laundry. If any considerable part of the time of these persons is given to the work of any special department named below, the compensation should be apportioned.

P salaries of those employed in this service

S board of those employed in this service

S rooms of those employed in this service

S laundry of those employed in this service

This includes not only personal and room laundry of office employees living in the house, but office laundry—towels, for example.

G Office Expenses

P express

S housing

To this account is carried at monthly intervals the share of house expenses, such as fuel, lighting, water, care, etc., which is chargeable to this department.

P stationery
All stationery used, including pens, pencils, mucilage, blank books, etc., with the expense of printing—but not including stationery and printing for the treasurer's office, nor printing annual reports, notices of meetings, or other corporation printing.

P postage
Postage for office use only, not including postage on annual reports or on notices of corporation meetings.

S interest
Interest on Equipment of office

S depreciation
Depreciation of equipment of office

P miscellaneous.
This may include repairs and replacements of office equipment, and insurance on that equipment.

G Telephone and Telegraph

P salaries
If the telephone is served by an employee who does other work also, the wages should be apportioned.

S board

S rooms

S laundry

S housing

P miscellaneous
This would include any messenger service for telephone and telegraph purposes.

DEPARTMENTS.

Special Departments
These may be few or many, as already indicated in the section on the capital accounts. In any case each should be subdivided for its various elements. In many departments, several salary accounts should be kept. The main subdivisions are likely to run as follows:
salaries
board
rooms
laundry
supplies
express
housing
interest
depreciation
miscellaneous

G Housekeeping Department

P wages of waitresses

P wages of chambermaids

P wages of other employees of this department not engaged in the preparation or care of food

S board of waitresses
S board of chambermaids
S board of other employees of this department
S rooms of waitresses
S rooms of chambermaids
S rooms of other employees of this department
S laundry of waitresses
S laundry of chamb rmaids
S laundry of other employees of this department
P supplies, table (not food)
replacements and repairs
P supplies, dormitory
replacements and repairs
P supplies, general
brooms, brushes, cleaning soap, etc., used in general housekeeping and not included elsewhere
P freight
S interest on table equipment
S interest on dormitory equipment
S interest on general equipment
S depreciation of table equipment
S depreciation of dormitory equipment
S depreciation of general equipment
G Kitchen Department
P wages
S board
S rooms
S laundry
P supplies
This should cover not only soap and other supplies consumed in the kitchen, but replacement and repairs of kitchen untensils. It does not include any food or fuel.
P fuel
To this account should be debited not only coal, gas, wood, etc., used in the kitchen, but also at convenient intervals a charge for power for steam at steam tables.
P express
S housing
S interest
S depreciation
G Laundry Department
P wages
S board
S rooms
S laundry
P supplies
Not only starch, wax, bleaching agents, soap, etc., but repairs and replacements of equipment, but not fuel.

P fuel
Not only coal, gas, etc., but also a proportion of power when steam or electric power is used.
P express
S housing
S interest
S depreciation
P outside laundry work
G Steward's Department[2]
P salaries
This includes wages of all persons engaged in ordering, receiving, checking, storing, and issuing food as purchased, or the proportionate part of the wages of any persons engaged in part in this work.
S board
S rooms
S laundry
P bread and pastry
Purchased outside.
P cream and milk
Includes ice cream and cheese.
P butter
P eggs
P fresh fruits
Includes care of fruit-bearing trees on the grounds.
P canned fruits
P dried fruits
P fresh vegetables
Includes care of vegetable garden.
P canned vegetables
P meats, fresh
P poultry, fresh

[2] The discussion of this treatment of food supplies brought out many interesting particulars regarding the dietetic value of detailed reports of costs. The chairman of the committee, in his previous reports, had dwelt on the value of great subdivision of food costs, so that both the sort of diet furnished and the sort of prices paid might be indicated—for otherwise poor food and high prices might show the same costs as good food and low prices. The final judgment of the conference led to the acceptance of a subdivision of food costs more than twice as great as that which the committee, in spite of its desire for great subdivision, had believed possible to get the conference to adopt. The following classes were added (the foods entering these classes, of course, to be taken from the larger groups first indicated): flour; breakfast foods and other table cereals; condensed milk; cream; ice cream; cheese; storage eggs; egg powders and other egg preparations; fruits preserved; fruit juices; meats canned; meats smoked or dried; poultry canned; fish canned; fish pickled, smoked, or dried; sugar, molasses, syrups, and honey; nuts and nut products; tea and coffee. All cooking and table fats, including table oils, were put into the same account with butter.

P fish, fresh
P groceries and canned goods not enumerated
P ice
P miscellaneous
Supplies not food, and repairs and replacements of equipment.
P express
S housing
S interest
S depreciation

GENERAL HOUSE AND PROPERTY EXPENSES.

P Taxes
On property occupied. Taxes on other property should be charged to the income of that property, as debits to the income account of that property, or, if the property does not produce income, to general income account.
P Electric Lighting
P Gas
P Fuel, Oil, and Waste
P Water
P Ice
The amount is later distributed in part to the Steward's Department.
S Power
This account should be charged for any power used for general house purposes, such as elevators and heating.
P Rent
P Maintenance of Buildings
To this account should be charged the cost of repairs only, but not repairs of plumbing and steam fitting. Additions and improvements should be charged to capital account.
P Depreciation of Buildings
Depreciation of any improvements, including plumbing and steam fitting.
P Care of Grounds
This includes cost of snow shoveling, lawn mowing, and care of flower beds.
P Maintenance of Machinery and Tools
Replacements and repairs only. Additions should be charged to capital account.
P Depreciation of Machinery and Tools
P Maintenance of Plumbing and Steamfitting
G Boiler Room Compensation
This account covers compensation of engineers and firemen. It should be credited for any work done by these men in care of grounds, repairs of buildings, etc., and the appropriate accounts should be debited.
P wages
S board
S rooms
S laundry

P Insurance

This should include only that portion of insurance that falls within the period. When insurance is paid for longer terms, the excess should be charged to prepaid insurance, and at proper intervals, as the insurance accrues, should be transferred to this account. To this account should be charged only insurance on property used by the institution. Insurance on property held as investment should be charged to the income of the investment, or to general income if the property bears no income

G Miscellaneous

P express

On any general house and property equipment

P miscellaneous

Items pertaining to house and property not elsewhere provided for and not administrative, professional, or departmental, should be charged here. If, for example, the institution provides local transportation for visitors and employees and does not collect enough from passengers to meet expenses, the deficit should be charged to this account.

S Interest B

On improvements—buildings and grounds

S Interest M

On machinery and tools.

WASTE ACCOUNTING SYSTEMS AND BASIC DIETARY RATION TABLES.[1]

CHARLES S. PITCHER.

Why should a waste accounting system be used?

It checks over-issues of food to dining rooms.

It causes dining room employees to serve the food more carefully.

It prevents dining room employees from throwing an amazing amount of good food into the garbage cans, as is shown by tabulations made of the waste reports.

It shows which are well-managed kitchens and dining rooms and which are poorly-managed kitchens and dining rooms.

It gives kitchen and dining room employees an incentive to do good work, as the waste reports show which are the efficient employees and which are the poor ones, and makes it possible to commend the one and criticise the other.

It teaches the kitchen and dining room employees to handle food supplies in a careful and economical manner.

It is beneficial to the inmates of an institution because there is a minimum of waste in the kitchen and dining room operations, more care in cooking and serving, and, as the waste is lessened, more food to eat.

If the food supplies saved are not needed to improve the dietary of the inmates, there will be a reduced expenditure for food supplies.

The waste accounting system is better than the inspection of garbage cans. It insures the return from the dining rooms to the kitchens of good food which is left over from the meals. Under the old garbage-can inspection system this is usually thrown into the garbage, as it is some trouble for the dining room attendants to return it to the kitchens, and the kitchen staff do not encourage the return of such food as it is troublesome to care for and later on to utilize.

The weighing of the "waste not usable" (garbage) is a means of determining whether or not the inmates are receiving sufficient food.

[1] Read by title at the Administration Section of the American Home Economics Association, Lake Placid, N. Y., June, 1912.

The weighing of the "usable food which can be utilized by the kitchens" (good food) is an additional and very effective means of determining this question.

One who has inspected garbage-cans to any extent knows that often there are found meat, potatoes, puddings, bread, etc. which appear to have been good when they were thrown into the cans. The charge is frequently made that institution kitchens and dining rooms are so wasteful that a number of families could be provided for with the good food thrown away.

The inspection of garbage-cans depends upon the opinion formed by the person making the inspection, and as the time goes on this tends to grow lax and ineffective. The inspector depends solely upon what he can see. With the waste accounting system everything is separated as far as it can be, and weighed. This gives a complete record from which comparisons can be made of the waste from different kitchens.

The foregoing general discussion is based on a study of waste accounting carried on in a large public institution in New York State. Some details of this work follow.

The use of the waste accounting blanks was begun December 30, 1910, and for the purpose of illustrating the waste accounting system the following summaries of the reports of one of the kitchens will be given covering a period of six months beginning July 1, 1911. Similar summaries were prepared for other kitchens at the same institutions but are not included in this brief account of the work.

"A. B. Kitchen," as it is designated, cooks for about 1100 women, employees and patients. The food is sent out to eight small dining rooms of from 40 to 60 persons each, and two large dining rooms, one of 300 persons and the other of 350, the numbers changing from time to time.

The summaries of "A. B. Kitchen" which follow are particularly interesting on account of the large number of dining rooms supplied from this kitchen, the difference in size, and the fact that the food for eight of the dining rooms is taken to them with a horse and wagon.

The first table relates to the "usable food" returned by the dining rooms to the kitchen. The amount saved is amazing, for before the institution of the waste accounting system, these dining rooms were so remote that it was seldom that any usable food was ever returned.

Usable food which could be utilized, "A. B. Kitchen."

MONTH.	MEAT.	BONES.	BREAD.	CEREAL BREAKFAST FOOD.	POTATOES.	VEGETABLES.	RICE.	MISCELLANEOUS.
	lbs.	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
July	649	1,751	10	164	49			
August	619	1,458		260	100			26
September	756	1,641½	41	450	298½			
October	855	1,871	5	412	347	50		
November	891	1,797	86	445	328	277	156	
December	1,067	1,629	292	357	471½	202	103	234
Total	4,837	10,147½	434	2,088	1,594	529	259	260
Monthly average	806⅙	1,691¼	72⅓	348	265⅔	88⅙	43⅙	43⅓

The waste not usable at "A. B. Kitchen," which is shown in the following table, is high on account of the large number of small dining rooms and the fact that considerable liquids, tea, coffee, soups, milk from cereals, etc., were placed in the plate scraps. Since the period covered by this tabulation the dining rooms have reduced the weight of the plate scraps very much by giving closer attention to eliminating properly the liquids.

Waste not usable, "A. B. Kitchen."

MONTH.	PLATE SCRAPS.	BREAD.	POTATOES.	VEGETABLES.	FISH-BONES.	PUDDING AND CEREAL.	CORNCOBS FROM GREEN CORN.	CEREAL BREAKFAST FOOD
	lbs	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*
July	8,081	2,258	1,678	262	124	377		
August	8,576	1,970	1,518	374	131	492	396	101
September	7,992	2,050	1,286	355	127	357	851	
October	7,932	1,823	1,093	448	130	459		
November	8,242	1,758	1,003	746	96	451		
December	8,463	1,350	854	549	77	542		
Total	49,286	11,209	7,432	2,734	685	2,678	1,247	101
Monthly average	8,214⅓	1,868⅙	1,238⅔	455⅔	114⅙	446⅓	207⅚	16⅚

After the waste accounting system had been in force in this institution for about half a year the kitchens were inspected. The lessened waste which was observed and the general improvement noted are directly ascribable to the waste accounting system.

The checking up of the waste reports had been purposely delayed as a test to see how well the chef, head cooks, etc., could operate the waste system without constant supervision on the part of the steward, and it was a satisfaction to find that they had been able to operate the system well in the old kitchen, and that the two new kitchens had been very successful in instituting and using it.

There seems to be a general feeling among the head cooks that the system is good, that it saves supplies and causes unserved food to be returned to the kitchens which formerly had been thrown into the garbage cans and lost. They think, also, that it causes more careful service of food in the dining rooms and that it aids the cooks in sending the proper amount of cooked food to the dining rooms.

The basic dietary ration tables are working in an excellent manner in all of the kitchens and are of great assistance in the proper distribution of supplies.

The variation of the waste returned from the dining rooms to the kitchens due to weather conditions is a matter which is hard to determine. The natural assumption would be that during warm weather there would be more waste than during cold weather, as a person's appetite is not supposed to be as good in summer as in colder weather. But during warm weather the inmates are more in the open air, which creates an appetite, and also such vegetables as lettuce, string beans, peas, radishes, spinach, etc., are in season and largely used. As these do not weigh very much and are relished by the patients, there is a tendency to offset any increase in waste due to warm weather, if such increase exists. During cold weather carrots, beets, turnips, cabbage, etc., are served as a second vegetable to a large extent, and as the inmates grow tired of them and as they are heavy in weight, the weight of the waste increases.

The total weight of the waste not usable at the kitchen designated as "Group 1 Kitchen" was as follows, for the months in 1911 covered by the reports: July, 7154 pounds; August, 7082 pounds + 2750 pounds corn cobs from green corn; September, 7000 pounds + 498 pounds corn cobs; October, 7574 pounds; November, 7876 pounds; and December, 7938 pounds.

"The proof of the pudding is in the eating" and from the recorded data it is clear that many hundred dollars worth of food supplies have been saved and turned back into the food ration of the institution.

The temperature from July to December, 1911, as reported by the District Weather Bureau at New York City is given below.

Monthly temperatures, July to December, 1911.

	MAXIMUM.	MINIMUM.	MEAN.
July	83.6°	68.4°	76.0°
August	78.5	65.0	71.8
September	73.5	59.6	66.6
October	61.7	49.6	55.6
November	48.5	34.4	41.4
December	45.5	32.9	39.2

The data quoted indicate that the waste food is greater during the colder months.

The nature of the food served at a meal has a large influence on the amount of waste which will be returned to a kitchen. For instance, when potatoes are served unpeeled in the large dining room and in the employees' dining room at "Group 1," the skins returned to the kitchen weigh from 50 to 60 pounds. When green corn on the cob was served to all of the dining rooms supplied by this kitchen on September 2, 1911, the cobs returned to the kitchen weighed 252 pounds.

At "C. D. Kitchen" cucumber skins weighed 27 pounds, muskmelon rinds 50 pounds and watermelon rinds 120 pounds. When pork is served, there is more waste owing to the fatness of the meat, than when beef, mutton, and veal are served.

The foregoing statements serve to call attention to some of the elements which must be considered with reference to the problem of dining room waste.

How to begin the use of the waste accounting system is a matter worth some special consideration.

In places where the system has not been used, it would be best to institute its use by first weighing all waste not usable, making one entry of it under "plate scraps" on the report blanks, and every few days as the kitchen and dining room employees grow accustomed to the new order of things to subdivide the waste until the system is in full operation. Great care should be given to determining the usable food which can be utilized by the kitchens, and this should be entered on the report blanks.

The meat should be trimmed from the bones returned from the dining rooms to the kitchens before the bones are placed in the stock kettle; unless this is done there will be a large waste of meat.

Some of the difficulties which may be met with in using the waste accounting system should be pointed out.

The weights may be faked as is true in other records. This can be prevented as the waste reports will bear certain "ear marks," and after it is found that it can be detected, the employees will stop such practices. It should be repeatedly impressed on everyone at frequent intervals, that the weighing must be accurately done and the reports carefully kept.

The dining room employees, unless reminded frequently, will allow liquids to get into the plate scraps, which increase the weight and cause it to appear that too much food is served on the plates. This can be prevented by two persons taking up the plate scraps, one dumping the liquids into a container, and the other dumping the solids into another container. Milk from cereals, tea, coffee, soups, water, etc., should not be put into the plate scraps, as plate scraps should consist only of the solids left on the plates, not separated and classified under other headings.

After the meat is carved in the dining rooms or kitchens, there is, particularly if a roast is served, a certain amount of meat left on the bones which is suitable for hash and stew meat. Unless care is exercised, however, this meat will not be saved for this purpose, but the bones, meat and all, will be put in the stock kettle, causing a loss in the food ration. The dining room employees may also throw good bread, cereals, meats, potatoes, puddings, etc., into the plate scraps, which can be prevented by the cooks in the kitchens as they discover this when the weighing is done.

When the dining rooms are remote from the kitchens, it is more difficult to operate the system, but the saving is greater from such dining rooms, as good food under the waste accounting system is saved, whereas under the garbage-can inspection system it is usually dumped into the cans. If the kitchen and dining room are located together, with a serving room between, the waste accounting system operates more easily, though the saving is not quite so large. Even under favorable conditions I have found large losses of good food occurring, due to the pressure of work incident to meal times, and unless there is some way of checking up, there are sure to be continual losses.

The frequent changing of dining room employees affects the dining room service materially, and to prevent this and to promote economy, they should receive as high wages as other employees. Where large

dining rooms are in operation there should be a well paid dining room attendant in charge, possessing ability in this line of work, as many times such an attendant's wages can be saved, and the dining room service improved also.

Much of the trouble experienced in dining room management is due to the feeling that dining room employees should not receive as much compensation as other employees. This is a wrong idea, for if good dining room service is expected the employees must be experienced, and to keep experienced employees in the dining rooms they should receive the same pay as other employees. No matter how well the kitchen and dining rooms are equipped, if they are not manned properly, the equipment will suffer and the service be unsatisfactory. No one would think of putting an expensive piece of machinery in charge of some one who could not take proper care of it. Why, then, should a dining room be placed in charge of a person to whom so little wages are being paid, that there is no incentive to continue in dining room work long enough to understand it? If good service is desired something must be done to furnish an incentive for the employees to give good service. One cannot expect to take all the while and to give nothing in return.

Basic dietary ration tables.—For many years there have been tables in use for the calculation of interest, income on investments, wage tables, lumber tables, etc., which are published in different forms for the convenience of persons who make calculations of this nature. The basic dietary tables are the application of this idea to the issuing of food from the storeroom to the kitchens for preparation for serving in the dining rooms, and the system deserves discussion, as, used together with the waste accounting systems, it makes for economy.

To illustrate, the basic dietary tables prepared a short time ago for the kitchen designated as "Group 3 Kitchen" are given. This kitchen serves about 100 male hospital cases, 100 male working cases, 149 non-working male cases, and 40 employees. The census is made each week and the requisitions on the storeroom are made in accordance with the census, which does away with a common, though objectional practice, which usually prevails in institutions, *i.e.*, to fix upon a certain amount to be issued to each kitchen. Under this old system the same amount was issued to the kitchen, neglecting any notice of increase or decrease in population, thus causing an over-supply or under-supply of food to the kitchen.

The tables which follow show the quantity required per meal for two groups and can be made out to cover as many items as desired.

Similar tables were prepared for the other groups supplied from this kitchen, but are not quoted in this summary as the data given are believed to be sufficient for purposes of illustration.

It can readily be seen that after the tables have been prepared, it is as easy to order one quantity as another, and as the quantity to be ordered is governed by the census for the week the same proportion of food is supplied to the kitchen month in and month out. The menu should be made out one week in advance and a copy supplied to the kitchens, dining rooms, and storeroom, and from this menu the head cook in charge of the kitchen can make out his requisitions on the storeroom, using the quantities that will be required to serve the meals called for on certain dates as shown by the basic dietary tables. The chef and the storekeeper, or their representatives, check these requisitions with the basic dietary tables in order to see that the right quantity is called for and that the articles are in stock. It is important that the dining rooms have a copy of the menu, particularly if they are remote from the kitchen, so that they will know in advance what dishes to have ready for serving the meal.

Detailed information relative to certain features of this subject which are not covered in this paper, as well as certain information relative to the waste accounting system, will be found in a paper read before the Conference of Stewards of New York State Institutions Reporting to the Fiscal Supervisor of State Charities, held at the capitol at Albany, N. Y., October 24 and 25, 1911.

Group 3—Kitchen. Dietary ration, breakfast, employees and patients.

FOODS SERVED.	NUMBER SERVED PER MEAL.						PER CAPITA.
	390	410	430	450	470	490	
	lbs.	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*lbs.*	*oz.*
Cornmeal	22½	24	25	26	27	29	0.929
Hominy	22½	24	25	36	27	29	0.222
Rolled oats	23½	24½	26	27	28	30	0.980
Wheat flakes	23½	24½	26	27	28	30	0.980
Rice	18¾	19½	20½	21	22	22½	0.761
Farina	24½	25	27	29	30	32	1.014
Eggs	(One egg for unemployed patients; two eggs for employed patients; three eggs for employees.						

Group 3—Kitchen. Dietary rations, one meal, employees only.

FOODS SERVED.	NUMBER SERVED PER MEAL.							PER CAPITA.
	50	60	70	80	90	100	110	
	lbs.	*lbs.*	*lbs.*	*lbs.*	*lbs*	*lbs.*	*lbs.*	*oz.*
Cold meat	27	32	36	43	49	54	61	8.958
Mutton chops	34½	29	34	39	48	51	58	7.833
Ham	24½	29	34	39	46	51	56	7.633
Beef steak	21	16	39	36	37	41	45	5.714
Corn beef for hash	18½	18	17½	20	23½	25	27	3.918
Fresh beef for hash	12½	15	17½	20	22½	38	37	3.916
Hamburg steak	17	21	25	29	33	37	41	5.595
Roast beef	31	37	43	49	56	62	69	16.971
Roast mutton	31	37	42	49	36	62	69	16.071
Mutton stew	37	38	38	43	48	54	61	6.952
Beef stew	37	21	38	43	49	54	31	6.652
Macaroni	4½	5½	6	7	8½	9	10	1.343
Peaches	9	10½	23	15	18½	18	19	2.792
Prunes	9	10½	13	15	16½	18	19	2.793
Apples	6½	6	3½	10½	18	13	14	2.041
Rice	2½	3½	4	4½	5	5½	6	0.695
Tapioca	2¾	3½	4	4½	5	5½	6	0.905
Gelatine	½	⅞	1	⅛	1¼	1½	1½	0.233
Cheese	3½	4	4½	5	6	6½	7	1.119
Sago	2½	3	3½	4	4½	5	5¼	0.783
Canned salmon	12	14½	17	19½	33	24	27	4.023
Salt fish	81	25	29	33	57	42	26	6.24
Eggs (dozen)	12½	14	11⅓	19	21½	24	26½	3 each
Bacon	16	12	15	17	15	31	23	3.357
Eggs (dozen)	6½	10	11¾	13⅓	15	16⅔	16⅔	2 each
Bacon	10	12	15	17	13	31	23	3.357
Liver	14½	17	20	33	16	29	31	4.476
Liver only	17½	30½	33½	36	29	34	36	5.595
Potatoes—unpeeled (bushel)	½	7/12	½	¾	10/12	11/12	1	8.131
Ham	17½	21	26	27	31	35	38	5.595
Eggs (dozen)	8⅓	10	11¾	13⅓	15	16⅔	18⅓	3 each

BETTER DRESS STANDARDS.[1]

MRS. JOHN C. HESSLER.

The problem of comfort in dress has already been solved, as the result of a most interesting evolution during the last thirty or forty years. I recall that, in my girlhood, the ideal waist measured from 20 to 21 inches. Today, in recent notes from Paris, we are told that French dress-makers give as the correct size of the ideal waist 26 inches, the fine and generous proportions of a Greek statue.

Built on the foundation of an undistorted body, woman's dress is today structually good and artistic. It follows sincerely the lines of the body it clothes. Sleeves conform to the natural shape of the arm, bodices are easy and comfortable. Collars are comfortably high or can be omitted. Skirts are usually wide enough for freedom of motion. Shoes of sensible shape are on the market.

Since we can clothe ourselves comfortably in every particular, what more is required? The question of woman's dress is not only one of physical comfort, but also of that gracious harmony and beauty which gives pleasure to the beholder and expresses in visible form an inner beauty and orderliness of spirit.

The question of dress cannot be separated from artistic standards. The Puritan cannot lastingly prohibit beauty in costume. A love of beauty grows in humanity along with its spiritual growth, and as one of the spiritual elements of life it should have its part in the furnishing of the home and in the clothing of the family.

Beauty in woman's dress lies in the attractiveness of material both in fabric and color, in the grace, continuity, and consistency of line, of the design of garments, and their adaptability to the wearer and her needs. It does not lie in complicated decoration. We look to dress, and rightly, to enhance natural beauty and to conceal natural defects. These standards of beauty are not pecuniary standards. They are for rich and poor alike. But instead of beautiful clothes most of us are satisfied with fashionable clothes. We have accepted the spurious substitute, fashion, when we went to buy beauty.

[1] Part of a paper presented at the biennial meeting of the General Federation of Women's Clubs, San Francisco, 1912.

In this day of the marvelous intellectual and social growth of woman, it is a matter for wonder that so many still unreasoningly obey fashion. Fashion grew in the proud desire of the royal princess—or the money princess—to produce by her dress a sharp distinction between herself and inferior mortals. These inferior mortals persistently imitated her as quickly as they could, to destroy this distinction. But the growth of intelligence and of a more sympathetic humanity is slowly remedying this. That it has lasted so long is because the fashion mania has been fostered. Women, through their love of change, have been exploited commercially, by means of the great foreign dressmakers who make the styles.

Few in America know that the inspiration of styles for the last year and a half or two years were the wonderful costumes of the Imperial Russian ballet, which has been appearing in the great cities of Europe. For them, Bakst, one of the greatest decorative artists of any time, staged Cleopatra, Scheherazade, and Narcisse. Dress designers seized with avidity the Egyptian, Oriental, and Greek suggestions of his costumes and the result is the chaos of present day fashions. Bakst's women are large waisted and many of them wear sandals. As a result, styles are large waisted and fashionable shoes are shown that are almost heelless. From Bakst come Oriental designs, primitive effects (derived partly from the Greek), the new cut of the peasant waist, the Greek mode of hair dressing, large meshed nets—adapted from Cleopatra—strange tall head dresses—which inspired recent millinery—and a host of details. They were designed to express physical movement and the voluptuous emotions or immoral and decadent scenic productions, and performed their office with artistic audacity and success. Translated through the dressmakers, they have lost much of their beauty—which after all, was largely in the ensemble—though they have lost little of their suggestiveness.

Changes in fashion result in tremendous economic waste, first, through the use of perishable material, second, through the discarding of clothing which has not begun to wear out.

The articles discarded because out of fashion were produced by labor. The new garments which take their places are also the product of labor. Discarding them results in needless labor. It is folly to say that these extravagances give work to some one. Every moment spent in labor which is unproductive of the real needs of the world is worse than wasted. It should be turned to constructive uses. The women who work in trades which minister to the waste of fashion

should be freed to rear the neglected children who tug at their skirts. An appalling number of the white slaves of society are slaves to the frivolity of women.

But, after all, the greatest loss in dress is not the loss of money, great as it is, or even the injustice to the worker. It is the loss of womanly dignity and stability of character which accompany the dissipation of time, labor, and thought which are the result of false standards.

I believe too, that all womankind, which, as Miss Addams points out in her new book, suffers as a whole from the degradation of individuals, is suffering definite moral degradation from prevalent fashions. This has come about so gradually that many of us do not realize how our standards of personal modesty have been blunted. We women have not realized that we have been watching, or, with innocence of evil intent, taking part in the breaking down of barriers between virtue and licentiousness. This is the very serious reason why the question of dress should be treated so frankly.

The problem of the increasing immorality of young girls is causing growing concern to those who know of it. Shameful proof of the reality of this situation is startling educators. A great scientist—a physician, a cosmopolitan—when asked what he believed to be the cause, replied: "I believe that it is due, in large part, to present-day dress. And their mothers are wearing the same sort of clothes," he replied, and went on to say, "I am ashamed of our countrywomen when I go abroad. They dress as no decent woman dresses in Europe. They go to Paris and see in public places, beautiful women driving in elegant carriages, wearing lovely and conspicuous gowns. Doubtless they think that they are seeing the great ladies of the city, for they hasten to the shops and buy similar garments. They do not realize that these beauties are the demi-monde and that the clothes they bought were made for the demi-monde—and for gullible Americans. No French gentleman would allow his wife to wear them."

We can only hope that the madly accelerated speed at which fashion moves today is rushing toward destruction of its empire. As women think for themselves along other lines they are learning to think independently concerning questions of dress. We cannot expect any revolutionary change at present, any "throwing off the chains of fashion." An increasing number are applying tests of common sense to offered styles. As the women of this number are among the intellectual and social leaders of their sex their influence has been and will be felt increasingly.

A certainty of reform lies in a better system of education of our young people. Boys and girls should be taught in the schools how to choose textiles, shoes, and other articles of dress and learn to be intelligent consumers. This instruction should be given before the high school is reached and should be continued throughout high school and college.

GENERAL DEVELOPMENT AND PRESENT STATUS OF THE SCHOOL FEEDING MOVEMENT.[1]

LOUISE STEVENS BRYANT.

University of Pennsylvania.

When three years ago a group of us began to study the provision of meals in elementary schools, we supposed that it would take about six weeks to complete the study and prepare a short monograph of whose length fifty pages seemed a fair estimate. As to this brevity we were soon disillusioned when we found references in the school hygiene journals to the twenty-fifth anniversary of the founding of school lunches in this city, and the assumption by that city of work carried on for forty years past by private philanthropy. In the end, we found we had to work back over a century to get back to the beginning of the movement.

The actual historical beginning was made when the city of Munich established People's Soup Kitchens. These kitchens were a part of the campaign initiated by the pioneer social worker, Count Rumford, in his world-wide campaign against vagrancy. They were designed to meet the need of the people of all ages, not only of the single group of vagrants, and from the first schools were encouraged to send groups of school children to them for a warm meal at noon. It is significant that this work was associated in the beginning with the larger industrial problem and that it antedated compulsory education. The work, though not organized for many years, was never discontinued, and in 1876 had become so definite a part of the school equipment that the city passed a law requiring all school buildings to include a kitchen and dining room.

France.—In France the work commenced in 1849, when a local battalion of the army stationed at Paris found that there was a surplus in

[1] Presented at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

their treasury at the end of the year. The men decided to use this money for the general good instead of keeping it for themselves, and looked about for a way to do this. At that time schools were provided at public expense but there was no compulsory school law. Text books were not free and sending their children to school was an expense beyond the means of many families. The soldiers finally decided to use the money to help their neighbors' children get a schooling, so they presented it to the school with the request that this be made the nucleus of further appropriations for this purpose. The "Caisse des Écoles" (school fund) gradually spread to other districts in the city, and in 1882 when the national compulsory school law was passed, one of its sections required the establishment of such a school fund in every school district throughout France. There was no stipulation as to the use of this school fund beyond the general one that it was to be used toward making the school more effective. From the beginning a large part of the funds has been dedicated to the school restaurants or *cantines solalaire*. At present over 1200 communities report that school money is used to support the *cantines* and this work in a modified form extends to the rural district. The work in France is thoroughly democratic. All classes of children attend the lunches, together with teachers and higher school officials. The school restaurant is so much a matter of course that, just as in the case of medical inspection, it was given little publicity until other countries investigated for their own uses.

England.—In England it was Victor Hugo who, in 1866, by furnishing meals to the country children in the neighborhood of his home in the Isle of Guernsey, started the charitable provision of meals to school children which, during the next fifty years was extended widely over the country. Little official notice was taken of this work in spite of local effort until the events of the Boer War. In 1902, Frederick Maurice, surgeon-general, made the startling announcement that only two out of every five men who applied for admission to the army could be admitted. The three were rejected because of physical unfitness.

Whether or not this statement was accurate, it served to rouse the country to a high pitch of excitement and for four years England was the scene of a most searching self-analysis that any country has known. It was rumored abroad that the English race was deteriorating; that the end of her supremacy was begun, and that she was repeating the history of Rome. Parliament appointed commission after commis-

sion to investigate these rumors. The first was charged to look into the condition of physical training in the schools with the idea that perhaps the gymnastics were at fault. This commission, after examining the physical training from the universities down to the public schools, discovered that this was not the case. The extent and character of the work were adequate but in the public elementary schools at least, the children themselves were poor material to train. One of the main reasons reported was that they were weak and undeveloped because of malnutrition. Accordingly the commission recommended that any reorganization of physical training in the schools should include the provision of food, either supplied by private funds or at public expense.

The next year a second commission was appointed to inquire into the causes of the alleged physical deterioration of the race. This commission reported that the causes were not evidently hereditary. In overwhelming majority the children born in each generation were sound, but the conditions of life were such that this initial strength was soon undermined. Again the factor of malnutrition was noted and it was declared that of the three factors affecting national vitality, housing, occupation and feeding, the most important was feeding. This commission in turn recommended school lunches as a partial remedy. The entire question was thrashed over again by a third commission appointed to investigate the extent of charitable school feeding in the country and to evaluate its effectiveness. This commission found that although widespread, private provision was totally inadequate and indicated that the school itself must assume responsibility and control if this was to be made adequate. Shortly after the report of the third commission a bill was presented in parliament that the school authorities might appropriate money for school lunches, and after a fourth commission had spent a year in investigation during which time the conditions disclosed by former commissions were emphasized, the bill became a law. A present there are about 150 towns providing wholly or in part for school lunches in accordance with the provision of the act. In London alone over 55,000 children are served daily. It is significant that the Provision of Meals Act was the first piece of legislation growing out of the fear of national deterioration. It preceded the Compulsory Medical Inspection Act, the codification and revision of all legislation dealing with children known as the Children's Act, the foundation of the National Anthropometric Survey, old age pensions, the minimum wage board and the

National Society of Eugenics—all steps toward national conservation in England. At present the work of school feeding is under the direction of the medical department of the national education board. Every child in the schools must be examined by the school medical officer and his nutrition is made the basis of the report on his physical condition.

Scotland.—In Scotland, which has its own school feeding law, the work is in a sense compulsory as the local educational authorities are required to see that any child reported as underfed is cared for.

Germany.—Within the last twenty years in Germany the work of school feeding has progressed largely on the basis of scientific experiment. Begun in Munich, as before mentioned, the work developed throughout the country as the result of independent initiative arising out of local need. The first national consideration was given when, in 1890, a conference of vacation colonists met and discussed means of making the effect of their work last through the whole year instead of a few weeks in summer. It was generally agreed that one of the main troubles was that the children returned to bad feeding and the result of the country outing was soon lost. The conference dispersed with the idea of investigating this particular problem, and during the next six years investigation and propaganda were carried on. In 1898 the Social Democrats introduced a bill in Reichstag providing for school feeding in all cities. This bill was defeated on the ground that it would mean a swift exodus from the country districts thereby increasing the congestion problem. When England passed her act, Germany became apprehensive of her own condition and since it was estimated that 46 per cent of the drafted conscripts were unable to pass the physical tests one of the major causes being, as in England, long continued malnutrition, the subject of school feeding has become a burning one. There is now agitation for compulsory legislation. The thoroughness with which the matter is being considered is indicated by the fact that during a single investigation records were made of the daily food of over 500,000 children and the causes of 30,000 cases of malnutrition were exhaustively enumerated. Other features of the German work are experimental investigation into children's food needs, and the elaboration of school menus to meet the standard requirements. At present one-half of all the cities have municipal or semi-municipal provision and four out of five of the cities with over 100,000 inhabitants. It is significant that the work is best done where child labor laws are best enforced. Though the movement has developed in practically

all the great European countries, and though each country presents its characteristic features, it is sufficiently well illustrated by Germany, France, and England. *To summarize.*—Begun over a century ago and promoted with the various objects of charitable relief, encouraging school attendance, promotion of hygiene, and national welfare, the work now is receiving national recognition and is subject to national legislation in France, Bavaria, Denmark, Switzerland, Holland, and Great Britain, and is national in scope with support from the municipalities in Germany, Italy, Sweden, Norway, Finland, Austria and Belgium. Beginnings have also been made in Spain, Russia and the United States.

Coming to the United States we find the work developed beyond the simply local only within the last three years. From small scattered attempts the work has spread to nearly forty cities ranging as widely in size from New York to Eau Claire, Wisconsin, and in locality from Boston to Memphis and Chicago to Houston, and into rural districts where it is logically associated with domestic science. The great public interest in the subject is shown by the daily press and periodicals, and by the publicity given it at the Child Welfare Conferences, School Hygiene and Medical Association meetings, etc. In several cities such as Chicago, Buffalo, Rochester, St. Louis and Denver, the school boards actively support the work. In others such as Philadelphia, New York and Boston, there is passive coöperation and tolerance.

The present need of the movement in this country is not propaganda but development of technique. We must be warned by the development of medical inspection and playground movements where in a large number of cases the work has been hasty; large initial funds have been appropriated but no insurance made against the waning of popular enthusiasm and momentary support. The interest shown by the Home Economics Association is a most hopeful feature and I am glad to report that your committee has formulated a definite program for dealing with precisely this question. We propose to constitute a clearing-house for information, mutual criticism and coöperation of people in all parts of the country actively engaged in school lunch work. Within a short time we hope to have in preparation a manual of school feeding which will deal with points of administration, organization, technical features of equipment, plans of dietaries, menus, etc. Another hopeful sign is the introduction of normal courses in school dietetics started or planned in universities and technical schools throughout the country.

In concluding this summary of the present status of school feeding in this country the two conferences to be held in the fall of 1912 should be mentioned. The Home and School League of Philadelphia proposes to devote two days of its annual conference to school feeding including an exhibition and demonstration, and the International Congress of Hygiene and Demography at Washington will include several exhibitions of school lunches from different parts of the country as well as many addresses by experts on questions of nutrition and relative topics. We hope that this work may take away the sting of the German writer's reproach who three years ago in a treatise on school feeding said she would begin with the United States as so little was done there.

THE RURAL SCHOOL WARM LUNCH.[1]

MARY L. BULL.

University of Minnesota.

In order that the brain be clear and capable of doing efficient work the physical needs of the body must be supplied by proper food. The food must be of the kind, quantity and quality suited to the requirements of the person. At no time during the life of an individual is the subject of "What to Eat" more important than in childhood.

Children are in the formative stage, not only of muscles and bone, but of mind and habits. Careless habits of thinking produce a dwarfed mind, as habitually stooped shoulders lead to undeveloped lungs. The young human being, to develop normally, must have food which will "fill the growing demand;" which will furnish material for the growth of the body, and also supply energy to carry on the activities of child-life, work, play, and study. Generally speaking, the school lunch has, until recently, received little intelligent thought.

During the last few years many of the large cities have proven, to the satisfaction of those most interested in child welfare, that a wholesome, simple, warm dish, served at the noon lunch hour, is a success from more than one view-point. Even where the city furnishes the lunch free of charge, it is considered an economical plan, and should not lead to a demoralizing dependence as feared by some.

The immediately noticeable good results are: more and better school

[1] Presented at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

work; smaller need for special training to enable pupils to pass grades in the allotted time. The probable good results, not apparent at the time, are a better physical condition of the pupils, and the stimulus received from a knowledge of work well done, and of being in line with the successful ones. These conditions must of necessity produce a healthier state of mind, and lead toward independence rather than dependency. There is no reason why, if such a plan result in better and more efficient work in the city schools, it should not be equally beneficial in the one-room rural school.

After studying conditions in rural schools for some time, I decided that hot soup at least could be prepared and served in the country school, provided a feasible working plan was suggested. Later the *Minnesota Extension Bulletin No. 19* was issued, suggesting how hot soups, gruels, chowders, and other simple dishes might be prepared and served, what utensils are needed, etc. Simple recipes are given, with a suggestive lesson on the food materials used in each. The food materials suggested in these recipes are such as are common to all households, hence readily obtained in any community. This bulletin was sent to county superintendents for distribution. A goodly number of teachers have tried the plan with satisfactory results. Parents and school boards in general think the plan an excellent one, and have given substantial aid to the teachers. Pupils are very enthusiastic, and are anxious to aid in the necessary preparation before the meal. Perhaps a good method of giving an idea of how the work is carried on in this state, is to give a few representative answers received from teachers to a list of questions which were sent out in the spring of 1912.

1. Has preparing and serving a hot soup with the noon lunch been tried?
   - *a*. Yes.
   - *b*. We have tried the preparing and serving of a hot soup for a number of weeks past, with what we consider a great deal of success.
   - *c*. We have tried serving soups, sometimes cocoa, with our noon lunch.
2. If so, with what success?
   - *a*. Splendid.
   - *b*. It has been very successful.
   - *c*. I believe it is a great success. I never saw the children so enthusiastic about anything as they are about our oil-stove experiment. They think soup and cocoa taste better at school than anywhere else. My only regret is that we did not get the stove sooner.
3. How much time is necessarily spent in the preparation of the hot dish?
   - *a*. But very little of school time.
   - *b*. Fifteen to twenty minutes.

c. Use recess period for preparing vegetables, etc. Very little school time used.

d. Time taken in the morning, recess, and at noon to finish preparation.

e. From ten to twenty minutes daily.

f. Not more than 15 or 25 minutes is spent in the preparation itself, as a number of the pupils help in the preparation and do the greater share of the work.

g. Two or three minutes.

4. Was the work done by teacher or student?

a. Students do most of the preparation.

b. We all help. I see to the cooking and the girls serve and wash dishes at the noon hour.

c. I let the girls take turns with preparing it. They enjoy it and become interested in the work. Having to do the work at school may induce them to try preparing the same dishes at home.

5. If done by the students, what arrangement is made not to break into their regular work?

a. They do it before school and at recess. I always attend to it during school hours. It takes very little time and preparation.

b. By all helping to a certain extent, very little school time is taken and it does not break into their regular work.

6. How secure the material to be used in the hot dish?

a. Pupils volunteer to bring the material.

b. I started by buying materials myself but the school board furnishes the food materials now.

c. The soup bone is brought by the pupils in the morning as are also the vegetables. The soup bone is put on to boil slowly as soon as it is brought. The vegetables are prepared before 9 o'clock, if time permits, or at the first recess. This gives ample time for thorough cooking. Each family supplies some article to be used, except the potatoes, which have been purchased of a family residing near the schoolhouse. On account of their bulkiness, it is not convenient for the children to carry them to school.

d. Two cents a week from each child and materials purchased with amount collected.

7. What equipment is used?

a. Heater, cups, spoons, kettle, ladle, large spoons, dish pans, fireless cooker—(tin cans for material furnished by children). Some children have brought plates, knives and forks.

b. Kettle, meat fork, large spoon, ladle, tray, dish pan, dish-towels and sauce-pan, bread knife.

c. A large kettle, large spoon, dish pan, cups and spoons furnished by the pupils.

d. Stove, kettle, tea-kettle, dish pan, trays and towels.

e. One six quart granite kettle, strainer and ladle.

8. How secured?

a. Stove is borrowed. The rest was furnished by teacher. Pupils furnish their own cups and spoons.

b. Had cups and spoons. Fireless cooker was bought with social money; the rest by the teacher.

c. Supplied by district.

d. The pupils furnished what they needed and the teacher got the kettle, spoon and dish pan.

e. From regular school funds.

f. Bought by teacher.

g. The oil-stove was paid for with part of the money made by giving a box-social and entertainment shortly after Christmas.

9. If the heater is used in preparing the hot dish, please explain the process.

a. The lid is taken off at the top of stove and kettle set in.

b. The cooking is done on top of stove in a large kettle furnished by the children. We have soup bowls at school brought by the children which are kept in a cupboard and also dish towels, etc.

c. We use our heating stove and have a wire to hold the kettle on the stove.

d. I use the heating plant and put on the food so as to allow it ample time for cooking.

e. We have a kerosene stove, 8 quart kettle and ladle. These articles were obtained through the efforts of the school-girls. At a recent "Farmers' Club," the girls volunteered to furnish a lunch consisting of coffee, sandwiches, pickles, and cakes. The sandwiches and cakes were made from the recipes contributed by Mary L. Bull. A collection of $3.50 was the result. For this, we obtained the above named supplies. Soup bowls and spoons are brought from the different homes.

f. Put water on at recess time. Food material added to boiling water allowing time for cooking.

10. Was a lesson regarding food, given in connection with the dish prepared, as suggested in Extension Bulletin No. 19? If not, why not?

a. To some extent.

b. Yes, in a very simple form.

c. We have taken up the value of different foods in part, in connection with the food prepared.

11. What is the attitude of the students toward such work?

a. They are willing to do the extra work and enjoy the soup.

b. They are very enthusiastic.

c. The children seem to enjoy the work and are enthusiastic. The parents are also interested, and are always willing to send anything needed.

d. The girls take turns at washing the dishes.

e. The pupils enjoy the work. We have fixed up a part of our hall as a "Kitchenette," and the boys transformed a grocery box into a "cupboard" for our dishes and supplies. This is fastened to the wall above our stove. The girls enjoy washing the dishes during the noon hour.

12. What is the attitude of the parents?

a. I have not heard of anyone who has anything against it. Many have spoken favorably of it.

b. Parents all approve.

c. I believe the parents think very favorably of our experiment.

13. What are some of the benefits derived from carrying out the Hot Lunch plan?
    a. It is an aid in discipline, a step towards domestic science, a great comfort, especially on cold days, besides the nourishment furnished in the foods.
    b. More appetizing than only cold food. Brings the scholars together as a family. Meal is more quiet and orderly.
    c. I believe it essential to the health and future welfare of each pupil.
    d. The pupils do better work after having hot lunches and it is educational in the line of cooking, manner of eating, cleanliness, etc.
    e. I think this work a great benefit both to the children and teacher. It helps to make the school more homelike.
    f. Health of children is benefited, opportunities for teaching good manners and cleanliness, boys more manageable, less confusion.
    g. It gives the children something warm at the noon hour. They enjoy eating their lunch more than ever before. It helps them to study better during the afternoon session. It is such a success that I would not do without it again if I had to furnish all materials myself.
    h. Noon lunch is eaten quietly and more slowly.
    i. So many of the children eat very little for breakfast that I believe they need something warm for dinner. A school lunch is not always very appetizing as the food dries unless it is packed carefully. If a hot dish is served, this will not be noticed much and the children eat a hearty meal, while without it, perhaps all they eat is a piece of cake or something equally nourishing—or nothing at all. Then, too, school is more "homey" as one of our girls said, and that means a good deal to all of us.

It was my privilege to partake of the hot dishes prepared and served in a number of one-room rural schools early in May of this year. I found them very appetizing and pleasing. The degree of order, cleanliness, and dispatch with which the work was done before and at the meal hour, differed in different school-rooms, very much as one would find differences in the homes of different housewives. In some cases, the entire work, from the preparing of food material to the hanging up of the dish pan was done quickly, neatly and without noise or confusion. In other cases, there was less order; but in no case did the work seem to attract the attention of the pupils at study. Teachers all expressed the opinion that the noon hour was more enjoyable and less trying when the noon hot lunch was served.

REPORT OF THE NEW YORK SCHOOL LUNCH COMMITTEE.[1]

The New York School Lunch Committee was not formed until lunches had been served for several months at a school of 2000 Irish children on West 44th Street, and at a large Italian School on Mott Street. The principals of these two schools feeling the impossibility of successfully teaching hungry children, asked two of the present School Lunch Committee to help them sell food at noon in the assembly room, and on November 23, 1908, luncheons began. This is mentioned so that it will be realized how naturally this work came into existence.

At first, the administrative part of this noon meal was very poor. There was no knowledge on either the school's part or that of the committee of the best methods, only a strong conviction that the children were being held back in their studies because of insufficient food or the wrong food, but we fortunately had had experience in preparing inexpensive nourishing food elsewhere. In fact the administrator should have had much experience in actual cooking and selling food and not try to do it from theory.

From the first this lunch has never been free. There were in the beginning three prices, a 3-cent, a 4-cent and a 5-cent meal, but this soon proved a poor idea as the children who paid 5 cents felt superior to the children who paid 3, while those paying the lower price always had a feeling of being cheated and sitting at a second table. This was soon changed and all lunch checks sold for 3 cents.

A Lunch Committee soon suggested itself as a necessity. We realized that the work was growing without sufficient organization, while principals of schools all over the city were asking for the lunch. The work, even to this point, was done with the permission of Superintendent Maxwell, of the Board of Education, but it was not organized until 1909, when a committee of fifteen was formed and approved of by Mr. Maxwell. Since that time this committee has administered all elementary school luncheons in New York City.

[1] Presented by title at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

Luncheons are now being served not only in the two schools mentioned, but in five others, three of them of Jewish children, making seven elementary schools in New York serving lunch.

The New York School Lunch Committee is also responsible for food served to the Special Anaemic Classes which have been opened in more than half a dozen of our schools. It should be stated in passing that these Special Anaemic Classes not only receive the regular school lunch but also have milk served at 9.15 in the morning and at 2.30 in the afternoon. All food is carefully supervised by a physician who comes once a week and weighs the children. This anaemic work in New York is paid for by the Charity Organization Society.

In the regular school lunches the method of selling the 3-cent lunch checks is not the same in every school, but the following has proved the most satisfactory. The assistant principal or a special teacher counts out the brass checks at 8.15 a.m., placing in each box (and there is a box for each floor) a few more checks than were sold the previous day. As the teachers enter to sign their time one from each floor takes a box, and when the school goes to assembly at 8.40 this teacher makes the rounds on her floor, selling to each room the checks required. This appointed floor teacher then brings the box, with money received from the sale of checks and all checks not sold, back to the principal's desk, having filled out an enclosed slip stating number of checks originally in box, number sold to children, number sold to teachers (for teachers pay 5 cents while children pay 3) and money received. When the boxes are all in, the one in charge sums up the total number of checks sold on all floors and sends to the cook the number of luncheons that will be needed. The cook, knowing the exact ladlefuls of soup or bowls of beans required, can avoid all waste. The teacher in each room holds the checks for the children until the first bell rings at noon when each child is given the check he has paid for. There are, of course, cases where a child is unable to buy his check himself, and such check is often purchased for him and paid for from some outside source, but every check must be paid for by somebody. So far the School Lunch Committee has not solved to its satisfaction this problem of indigent children.

The luncheons are cooked in the school building, the Board of Education allowing a room or a part of a room for the purpose. The Board has also, in some cases, contributed the tubs in which the dishes are washed, and in one or two instances provided the stove. Apart from this, all kitchen utensils and all deficit must be met by private sub-

scription. This, of course, limits the ability to extend the work beyond a certain point. The New York School Lunch Committee expects to carry on this work only until such time as it has demonstrated to the people of New York the necessity for the city to serve luncheons on a large scale.

In the preparation of the meal one cook in each school prepares the lunch. If there is a Special Anaemic Class that is served separately, then a kitchen maid is necessary. In addition to this paid service from ten to fifteen children assist in serving the meal and afterwards in washing dishes. These children receive their lunch in return for their services.

Besides the 3-cent meal which every child must have who comes to the lunch at all, there is a penny table in each school. On this table there are for sale such things as baked apples, apples on the stick, prunes, corn, crackers, spice cakes, sandwiches, and always hot cocoa. The wares on this table vary each day, and must be studied to meet the taste of the children. Any child who has bought his check in the morning can spend his extra pennies at the penny table, and we have found that this table prevents the push-cart rush at noon. It is the fun of buying at this table that makes many children willing to purchase the lunch check in the morning. There is nothing very exciting about spending money for a bowl of soup, but there is something that appeals to a child's nature in choosing what he will buy especially when it is the dessert part of the meal. So far it has seemed necessary for some one from outside to come in at noon and take charge of this table, also the rolling of the coins taken from the sale of checks. Teachers in our public schools are too busy to have this additional work put on their shoulders by an outside organization. If teachers *are* to supervise the luncheon it must be considered and arranged for by those planning the school work as a whole. Before noon each day the pennies from the sale of the morning checks are turned over to this representative of the School Lunch Committee. She counts and rolls this money; adding (after the luncheon) the receipts from the penny table. Each day, all receipts are put into a bag, and at the end of the week the contents of the five bags are added—a printed slip is filled out and all handed in to the treasurer of the School Lunch Committee.

The success of the luncheons in the elementary school lies, it seems, in good supervision. For example, a child who is ladling out soup naturally (without supervision) will give his friend a large ladleful while he takes the opportunity to give the boy whom he doesn't like a

meagre amount. Very small children are apt to get burned with the hot soup and must be watched and often guided to the table. At the penny table it is neither wise nor kind to have children do the work without constant supervision on account of the handling of money. To make change, to help the small children decide what they want, to keep the line moving so that those waiting will not grow impatient, all this takes daily directing.

The detail connected with school lunch work is very great. Hundreds of pennies have to be collected from many directions. They pass through many hands and must be rolled before the bank will accept them. What is sold on the penny table must be sold at a profit because a boiler of soup costs $2.50 and only $2 is received for it. This deficit is met by the profit from the penny table. Also, it is necessary to see that the right amount of nourishment is put into every day's soup, and it is well-known that a good cook can make soup taste well and still not satisfy as to food value. Children must wear clean aprons. It is hard to make an inexperienced maid in our own homes feel the necessity of daintiness. How much harder is it to make children care that their aprons are stained, and surely the cook is too busy in her own department to watch the children. I regret to say that even she needs supervision as to her own perfect cleanliness. Children who have lived in the street and have never hesitated to help themselves to the food within their reach, are just as smart when it comes to getting the best for the least money at school luncheons. For example, it is very easy for one boy to buy a check and purchase his tray of soup and then go away and sell for one penny the privilege of carrying that tray and empty bowl up to the penny table. This second boy purchases any amount of dessert without the necessity of eating soup and this one tray can be sold many times if someone is not on hand, someone quicker than these street-trained children.

A lack of this proper supervision is, it is believed, what has brought criticism upon the school lunch, where criticism has been given, and yet this part of the work is expensive and the children's pennies can never pay for it. The great difficulty is that the schools are scattered —and the one hour when supervision is needed is the same in every school. A paid supervisor to go into each school at noon is too expensive, and yet from somewhere this supervision must come.

The manner of serving the lunch is as follows: One boy collects the checks as the children come up in line at exactly twelve o'clock. Two boys fill the bowls, while another puts the bowl on the tin tray and

hands it to the child. These children wear aprons, caps and cotton gloves. The child then passes on and receives his spoon and then his two slices of bread. His 3-cent meal is now complete—if he wishes more, he and his tray pass on to the penny table, where he can buy to the extent of his income. The children stand at long tables which are simply boards on horses. At the end of the meal all trays are taken to a receiving table, spoons are dropped into hot water, two boys scrape the dishes and pile them in a wagon, which is later wheeled into the kitchen for washing. The meal is over at 12.25, or 12.30 at the latest, so that half an hour still remains for play.

It is impossible to give the entire menus of all the schools. In the Italian schools we have Italian cooks, and the macaroni, dried lima beans and lentils are used, all dishes being cooked in Italian oil and in the Italian way. In the Jewish schools only kosher dishes are served, and all are cooked by Jewish cooks and with the full approval of the rabbi of that district. In the Irish school, for 3 cents a child receives Irish stew, or baked beans, potato with meat gravy, rice, pea, bean, barley soups, and what they like above all things, clam chowder. What children like must always be taken into consideration. A child is not at home with his mother and obliged to eat what is put before him, he is a purchaser out for himself. His 3 cents is a great deal of money to him. It can be spent to his perfect satisfaction outside. There is no compulsion exerted by either the school authorities or the School Lunch Committee. We have to make the lunch more attractive than the red lemonade, the candy and the hokey-pokey outside. Just because *we* believe that oatmeal and milk would be good for him is no reason to suppose that he is going to spend his money for oatmeal and milk when, as we are told many times during the week, he is sick of it because he *has* to eat it at home. Therefore, consideration of the child's taste must always be taken and weighed with the food value.

This 3-cent meal is the way in which luncheon is served at five schools. In two others the plan of the penny luncheon is being tried, for some of the committee felt that there were children who might have 1 or 2 cents, but not the required 3. Also, the larger children, especially boys, did not like to be dictated to as to how they should spend the entire sum of 3 cents, even though they had it. Therefore, the experiment is being tried of having the check bought in the morning worth 1 cent and the child gets a penny's worth of soup for his check (although it is really more than 1 cent's worth). He can buy

bread for the second cent, and then pass on to the penny table. The School Lunch Committee still withholds its opinion as to which method of serving luncheon is the better.

Investigations are being carried on at the present time to help decide this question. For example, in a school where a large part of the children came from very poor homes, the lunch was put down to 1 cent. In this school the names of all the children who spend only 1 cent at noon and, therefore, had only soup and no bread and no extras, were taken for two weeks. Out of 200 children a day, there were only six who took this unfortunately small meal repeatedly. These six were all visited, and in every case the parents said that they gave the child plenty of money in the morning but the temptation to buy on the way to school had been too great and so only 1 cent remained when the noon hour came. We also visited the children who came regularly to the lunch to find out from what class our custom is drawn, for some have asserted that the mothers use the school lunch so that they need not feel the responsibility of cooking dinner. We feed on an average about 10 per cent. In the schools of 2000 children, from 200 to 250 buy their luncheons at school. In an Irish school the names of 90 of the most regular were taken and the mothers visited. Thirty, or about one-third, put the entire responsibility of the child staying at school for lunch on the child. Such remarks as these seemed to decide the question: "He wants to go."—"He teases till I give him the pennies."—"He won't come home because he likes to eat with the other children." When asked if the mother herself were glad, she would answer that she did not care, it was all the same, the children decided. Twenty-eight, or about one-third, gave the reason that the family was large, the work heavy. The investigator saw from the huge washings and the three or four children under school age that the mother spoke the truth. To these women the school lunch lightens labor, and although they are at home at noon it makes the home more orderly and work more possible if the school children do not come rushing in. In sixteen cases, or about one-sixth of the number investigated, the same reason was given, but in these cases it was thought not as necessary. The mother seemed to have time to cook, but was glad not to. In more than one-seventh of the cases both the fathers and the mothers worked out by the day. To them the school lunch has solved what before was an impossible problem. The child from these homes must depend on the school.

In only five of the cases, the mothers frankly did not approve of the

school lunch, and yet these were cases where the children ate at school regularly. They preferred to have their boys and girls come home at noon, but the children wouldn't come. They said often only a part of the money was spent for lunch and the rest went for cigarettes or candy. In these cases the parents had no discipline over the children, the fact that the mother did not wish her child to stay at school for luncheon was no indication that the child would not be there every day. Many of these mothers had half the children in school while half came home, for the children decided. This is often the case in Irish families. I mention it because the characteristics of the different nationalities seem to have much to do with this school lunch generation.

In the Italian families we find a great desire to have the children at home at meal time. In the less intelligent, this instinct is very strong as they do not as quickly see the advantage to the child of the hot midday meal at school, they cannot as easily accept a new idea. In nearly all of the cases where extreme poverty was the cause of malnutrition, the family was found to be under the care of some charitable organization, sometimes the woman realized that she was unable to give her child the right food, but she had not the money to pay for the school lunch. The Lunch Committee has had part coöperation from the two large charity organizations of New York, but it would seem right if luncheons become an established thing, that the children of these families receive daily the school lunch as a part of the aid given the family.

In another school of Irish children, 83 of the families where malnutrition seemed to be interfering with the child's study were visited. Not any of these children were buying their luncheons at school. A few were receiving the meal as compensation for services rendered, a few were given lunch which was paid for by an outside source—the others did not come. The chief reason, the investigator found on visiting the homes, was what she called the indifference of the mother. It was the same kind of indifference that in the other cases mentioned gave the children the pennies because they teased, there was no thought whether the lunch was a good thing or not. In one instance it was easier to give, in the other, it was easier not to. In the latter case the parents were shiftless, they could not remember to get the 3 cents ready in the morning although in many cases the mother acknowledged that she had 5 cents, 10 cents and sometimes a quarter, but she couldn't think to get it changed. In some homes, usually where the mother

drank, no thought was given to where the child ate. The children from these homes come to the lunch once in a while, but they usually drift away at noon, no one knows exactly where they eat or what they eat. Shiftlessness, lack of thought, the same ignorance that is so often the reason for the poverty, and in some cases real poverty, prevent us from reaching all of the children whom we must reach if our lunch is to serve the purpose for which it was established.

An investigation last year proved the advantage of the lunch to these under-nourished children. Out of 1000, 265 were selected as suffering from malnutrition. Half of these were Irish and half Italian. They were weighed and measured and their home conditions studied. Half were given lunch while the other half ate at home, ate from push carts, or went without lunch altogether. At the end of three months the same children were weighed, measured and their standing in school looked into. It was found that the average gain in weight of the children who stay regularly at school was three times as great as that of the others and their standing had improved to a marked degree.

As to the financial side of the school lunch work in New York, the treasurer's report is here presented in part. It will be seen that we do not pay expenses. The cost of providing 63,434 lunches was $2937.83, which means paying for all food and service in preparing food. We received for these 63,434 lunches $2537.35; the deficit being only $400.48 for the year or 0.0063 per child per day (this is without administrative work). We believe that food and service can be entirely paid for by the children. We do not believe that if every school in New York City opened a lunch room and every child bought his luncheon that that would pay for the equipment, the maintenance and repair or the administrative work. This account of school lunch work in New York is not meant to be discouraging. We are feeding on an average twelve hundred children a day. The children are gaining, and the food is thoroughly liked, but we do not think of it as a finished problem. It is of course the children of the ignorant, poor parents that we must reach—not a few of them, but all of them.

It is the history of all new movements that the timid and ignorant hold back at first, but we feel sure that the continued establishment of the lunch room in elementary schools will itself solve the problem by the very strength of its advantage.

The equipment for 200 children is as follows: 200 bowls, 200 trays, 200 spoons, 100 saucers, 2 twelve-gallon boilers, 1 six-gallon boiler, 1 large basket for bread, 1 table cloth, 3 ladles, 1 bread cutter, 2 large

spoons, 1 large knife, 3 small vegetable knives, 1 frying pan, 4 large supply cans, 1 garbage pail, 1 small pail for spoons, 1 large tray, 1 chopping bowl, 1 meat chopper, 3 milk pans for crackers, etc., dish towels, towel rack, wash board, scales, scrap dish, broom, dust pan, 16 horses and 8 long board tables, 3 stools, 10 aprons for servers, 6 pairs cotton gloves, dish pan, 3 kitchen tables, 1 zinc cover top table for penny table.

MABEL HYDE KITTREDGE,
Chairman New York School Lunch Committee.

ELEMENTARY SCHOOL LUNCHES UNDER SCHOOL DEPARTMENT DIRECTION, BUFFALO, N. Y.[1]

MARY E. L. SMALL.

This paper must necessarily be in the nature of a report since this week, June 21, marks the close of the first year of serving lunches for public school children under the administration of the school department. There have seen so many enquiries regarding the management that this would seem to be a fitting time and place to tell our experiences.

Prior to this year a committee from the City Federation of Women's Clubs had charge, for five years, of the "Penny Lunches," a bowl of soup or one half pint bottle of milk with a roll, served at noon, in five grammar school buildings.

In May, 1911, the Common Council passed an ordinance making this work a part of the Domestic Science Department. The Superintendent of Education is in general charge, in coöperation with a commission appointed by him. A supervisor of lunches was selected from the eligible list of domestic science teachers. She is a graduate of Mechanics Institute, and much of the success of this initial year is due to her deep interest, and her well-trained ability. The city appropriated $2000 to cover the expense of service and equipment, the food to be sold at cost of materials. This has been accomplished in the main, although with difficulty, as the children had the "penny" lunch idea so firmly fixed in their minds, that the 2 or 3-cent meal did not take well in the old schools. In the new schools, however, with no traditions to follow, the balanced meal has met with favor.

[1] Presented by title at the Lake Placid Meeting of the Administration Section of the American Home Economics Association, June, 1912.

The experiment of serving lunches was carried on in six schools, in three of these for the first time, and it is the judgment of all that the work proved more satisfactory in these three than in the others. The three most important criticisms passed upon the work here in previous years, were: (1) The tendency to relax maternal responsibility in the preparation of a meal. (2) Giving the child more than he knows he is paying for—"wrong values," or as some put it, "pauperizing." (3) Serving at the noon hour an insufficient amount of food to constitute a meal.

With these criticisms in view the aims the past year have been: (1) To serve only those children whose mothers are away at work all day; those who would not have hot food, and those who live at too great a distance from the school. (2) To teach the child the value of money and proper food, by giving him exactly his money's worth. (3) To furnish a meal according to dietary standards.

There has been hearty coöperation from the Board of Health through reports of the Medical School Inspectors, from parents, principals and teachers. The Charity Organization Society has given lunch tickets to needy children.

In two of the six schools, cocoa or soup was served daily to children who brought a lunch from home. This gave an opportunity for suggestions on "The Lunch Box," and in a short time "newspaper-" wrapped lunches disappeared, and in their places were seen neat boxes, paraffine and white paper, and a great improvement in the contents. Then, too, good manners are promoted by a properly supervised school lunch room.

A study of the pupils availing themselves of the school lunches shows the following nationalities and conditions: Polish—One school, average daily attendance in January, 353; Italian—In two schools, 221; Syrians, Irish, and others representing unfavorable social conditions, one school; and a representative class of mixed nationalities from fairly comfortable homes, in two schools.

The staff of assistants includes the supervisor, a cook in each school with one or two assistants as the number of pupils demands; pupils who assist in serving or dishwashing and receive their luncheon as compensation. In two schools the supervisor taught cookery to classes of girls, the results of her day's lessons being some "extra" served at noon. In one other school having a domestic science room, the instructor coöperated by giving a larger amount of material to each pupil

than the usual individual quantity, and sending those results to the school lunch room.

The school lunch has been served in class rooms, in the boys and girls play rooms in basements, and in one school an attractive room was fitted up in a former play room. One of the most gratifying achievements of the year was the promotion, so to speak, of the boys from a cold dark basement to a sunny class room heretofore used for girls only, to have cocoa with their luncheon, the privilege depending upon behavior. It is needless to say that those nice boys never lost that privilege and they are our firmest friends.

The selling of food in our high schools is the janitor's privilege. In our three new buildings, however, there will be modern lunch rooms, to be under department direction. Following is a list of food served at the noon hour:

For 1 cent, any one of these: One-half pint of vegetable, bean, split pea, lentil or rice soup, corn chowder, rice and tomatoes, macaroni and tomato sauce, or, one-sixth quart milk with 2 crackers; 4 stewed prunes, 5 stewed apricots; 1 ounce sweet chocolate, 1 cup (one-sixth quart) cocoa, 2 rolls or 2 sandwiches, fig, date, jelly, 12 peanuts; one-fourth cup stewed apple or rhubarb. These desserts are served only to children who have had the hot food.

For 2 cents: one-sixth quart soup or cocoa, one-half roll, cooked fruit; or one-fourth quart soup with 2 rolls.

For 3 cents: one-fourth quart soup—bean, 2 rolls (or 2 sandwiches), 1 ounce chocolate (or other dessert).

From November 6, 1911, to June 21, 1912, 50,554 luncheons were served; cost per capita, $0.013.

Expended for salaries		$1119.20
Equipment for three new schools and additions to three old ones		224.86
Moving, etc		3.95
		$1348.01
Food materials	735.00	
Value of food material on hand	24.78	
	$710.22	
Received from sale of lunches	585.79	
Deficit on food	$124.43	

The deficit is largely due to lunches given for children's services.

EDITORIALS.

The Memorial Fund.

On another page of the JOURNAL appears a copy of the circular which has very recently been sent out by the committee having in charge the raising of the Ellen H. Richards Memorial Fund. It recommends that Mrs. Richards' birthday, December 3, be used as Home Economics Day by women's clubs and other organizations, at which time an earnest effort shall be made to put before the public the history and present status of the movement. Many excellent suggestions are given for programs covering the whole field, suggestions which, it is hoped, may be widely used; educational propaganda in this field is greatly needed.

But the part of the circular to which we wish to call the special attention of our readers is the one concerning the Memorial Fund.

We have in previous issues spoken of the growth of this project, the time has now come for concerted action. Through the JOURNAL may be obtained free circulars which will assist any group of workers to organize for raising its proportion of the fund.

Mrs. Richards' name is one to conjure with. Her gentle and inspiring personality became known to a large number of Home Economic groups, especially to teachers and students, and to a still wider circle her books have proved her power of leadership. Her scientific training and her broad views helped her to place this branch of applied science on a dignified plane which it had never before reached. In her name we can ask in every community help for this fund which is designed to carry on her noble work.

This fund, which it is hoped will reach the sum of $100,000 is called a research and publication fund. We are confronted with an ever increasing call for knowledge that shall help to make daily life in the home more happy and more efficient. Much knowledge already exists, but chiefly in the published papers of specialists or in the reports of such societies as are affiliated in the American Association for the advancement of Science. Still more rich in material for this purpose are the reports of boards of health and of hygienic congresses. Last September during the meetings of the great International Congress

of Hygiene held in Washington it was the subject of universal lament on the part of the press that these discussions should not reach the people who stood most in need of them.

Work of a high grade bearing on nutrition, clothing, shelter, technical education and a host of other subjects should be summarized and otherwise adapted to the use of teachers and home-makers. Moreover, experiments should be undertaken in order to solve still other questions. To do this a sum of money is needed and for such worthy ends we should not seek in vain. Let us not add to our other crimes of economic waste that of waste of knowledge for which we are suffering and which lies close at hand. We need this permanent national agency for home betterment. The responsibility for the raising of this fund lies first on the members of this Association and the subscribers to the Journal. The Fund Committee have asked all such to become local committees to canvass personally for the Fund, to organize observance of Home Economics Day in schools and to extend the sale of the Richards Calendar.

HOME ECONOMICS DAY, DECEMBER 3, 1912.

Suggestions for its Observance.

Schools, colleges, women's clubs and other institutions and organizations, are invited to observe December 3, 1912, or some early day in place thereof, as "Home Economics Day," to celebrate the widespread adoption of household science and arts as a subject of instruction, and especially to point out some of the lines along which progress has still to be made both in education and in household practice.

December 3, 1912, is the seventieth anniversary of the birth of Ellen H. Richards (1842–1911), late of the Massachusetts Institute of Technology, who for forty years was the leader in the Home Economics movement, and to whom more than any one person we are indebted for the modern movement to make the common matters of food, clothing, and shelter the object of scientific study in the laboratory, of instruction in public schools, high schools, and colleges, of consideration by women's clubs, and other civic organizations, and of public concern and action as reflected in protective legislation and municipal regulation.

It is suggested that Home Economics teachers everywhere organize a fitting observance of the day by planning a program which scholars and students may carry out, presenting to their fellows and perhaps

to the public, something of the history and present status of the home economics movement. Suggestions for topics, essays, and informal talks are given below. Women's clubs and other civic societies are also urged to make this an occasion of increased knowledge of the Home Economics idea, its place in education, and its significance for a better home life, by a similar program, emphasizing such instruction in their local schools and more adequate support for instruction in their state college or university, and more extensive plans for popular education to reach every home in country or city.

A national movement now under way to raise a permanent fund of $100,000 as an Ellen H. Richards Memorial, to be used for scientific investigation in Home Economics, and for publication, thus continuing her work of leadership, may well be given publicity on Home Economics Day. Where conditions permit, committees of students may, perhaps outside school hours, organize an entertainment, or other appropriate enterprise, the proceeds of which can go to this permanent fund for home betterment. A benefit performance or lecture may be organized by clubs; and in all cases, perhaps, sales of the Richards Home Economics Calendar may be undertaken (the proceeds of which go to the Fund—see below). In some cases admission can be charged to the Home Economics Day observance.

Suggestions for Home Economics Day Program.

Essay: The First Home Economist—Xenophon, 445–355 B.C. Author of "Oeconomicus." See "Xenophon" in Encyclopedia; and translation of this charming description of Greek housekeeping in Bohn's Classical Library; read selections from Chapters III, VII, VIII, IX.

Essay: An American Home Scientist—Benjamin Thompson, Count Rumford, 1753–1814. One of the greatest scientists of his time, who considered as of the highest importance careful scientific studies of kitchen ranges and cooking stoves, cooking utensils, fuel economy, baking of bread, "art of making coffee," making of soup, design of fireplaces to prevent smoking, heating and lighting of houses, hygiene of bathing, and other household problems. See Encyclopedia, "Rumford," and "Benjamin Thompson;" in large libraries, consult "Life of Rumford," especially Volume IV and "Essays of Rumford."

Essay: Our First Home Economics Book—Miss Catherine E. Beecher, 1800–1878, author of "A Treatise on Domestic Economy," 1841; also, "Domestic Receipt Book," 1842; "Health and Happiness," etc., and with her sister, Harriet Beecher Stowe, "The American Woman's Home and Principles of Domestic Science," 1869; Principal of Girls' School at Hartford, 1822–32; urged that women become teachers, and that all girls be taught domestic economy; founded 1852, American Women's Education Association, establishing higher schools at Milwaukee, Dubuque, and elsewhere, which were to teach Domestic Economy. See her books in libraries; biography in Journal of Home Economics, Baltimore (June, 1912, number, 50 cents).

Essay: Science and the Home—Ellen H. Richards, 1842–1911, Vassar, 1868, Massachusetts Institute of Technology, 1873, where she was instructor in Sanitary Chemistry; Founder of Lake Placid Conference on Home Economics, 1899–1908; American Home Economics Association, 1908; JOURNAL OF HOME ECONOMICS, 1909; author of "Cost of Living," "Chemistry of Foods," "Euthenics," and many other books. For facts of her life, see "Ellen H. Richards and the Home Economics Movement," sent free on request to American Home Economics Association, Baltimore; also "Life of Ellen H. Richards," by C. L. Hunt, published by Whitcomb and Barrows, Boston ($1.62 postpaid); JOURNAL OF HOME ECONOMICS, Baltimore (October, 1911, number, 50 cents). The Ellen H. Richards Memorial Home Economics Fund, for Research and Publication—secure free circular from American Home Economics Association, Baltimore, Md.

Essay: The Home Economics Movement: It is a development from (1) The Manual Training movement (the value of hand training in general education); (2) vocational education movement (the present proposal that every young person shall be trained to earn a livelihood); (3) the higher technical and professional education (the training for expert leadership, at first in law, theology, and medicine, now applied to every field of service including school philanthropy, and even household). Sewing of samplers in Colonial schools; first college courses in home economics, Iowa State College, 1872, Kansas State College, 1873, University of Illinois, 1874; there were four courses in state colleges in 1890, and 30 in 1900, and in 1911 college courses in 130 institutions; private cooking schools in Eastern cities from 1873 on, and the first public school kitchen in Boston in 1887; the training of teachers begins in Teachers College (now part of Columbia University) in 1867, and Boston Normal School of Household Arts, 1888, and in 1911 there are 100 normal school courses for teachers; home economics now taught in most city schools, in over 700 high schools (1911), and in many rural schools.

Essay: What Home Economics Stands for: "Home Economics as a distinctive subject of instruction includes the economic, sanitary and aesthetic aspects of food, clothing and shelter as connected with their selection, preparation and use by the family in the home or by other groups of people. Instruction in this subject should be based on the laws of the physical, biological and sociological sciences." Its platform as stated, by Mrs. Richards: "Home Economics stands for: (1) The ideal of home life for today unhampered by the traditions of the past; (2) the utilization of all the resources of modern science to improve the home life; (3) the freedom of the home from the dominance of things and their due subordination to ideals; (4) the simplicity in material surroundings which will most free the spirit for the more important and permanent interests of the home and society."

Essay: What the National Government is Doing for the Home: in U. S. Department of Agriculture—Nutrition Investigations (write for information) and publications (write to Superintendent of Documents, Washington, for price list of publications on food and diet); the national pure food law (secure copy by addressing Secretary of Agriculture); U. S. Bureau of Education, Washington, and U. S. Children's Bureau, Washington (write for information); the federal land grant of 1862 helps support the state colleges, and annual grants are given for research in agriculture. Shall not the national government do more for the home? (1) Page-Wilson bill proposes aid for high schools, normal schools, and extension teaching, in *Home Economics*, industrial arts, agriculture (write Hon. Carroll S. Page, U. S. Senate,

Washington, for copy); (2) Lever bill proposes aid to extension teaching in *Home Economics* and agriculture (write Representative Lever, U. S. House of Representatives); (3) Smoot bill proposes aid for *Home Economics* research and publication in each state agricultural station (write Senator Smoot, U. S. Senate); (4) Wilson bill proposes a federal bureau of Domestic Science (write Hon. Wm. W. Wilson, U. S. House of Representatives); the U. S. Bureau of Education wishes an additional appropriation for experts in *Home Economics* and industrial education (write Bureau for information).

Essay: What of Home Economics in our state? Write to State Education Department at Capital city for information regarding domestic science in elementary and high schools; to state colleges and other women's colleges regarding college courses in Home Economics, and extension courses for home study; to state normal schools; to chairman of state federation of women's clubs regarding club study of home problems. What are the next steps in progress? Is there a state syllabus for schools? Are bulletins printed by state college for home women? Should there be money for a state household experiment station? For extension education to reach every home with practical help? What advance could be made in the local community?

The Ellen H. Richards Home Economics Calendar for 1913, a decorative wall calendar, twelve engravings, portraits of Mrs. Richards, and illustrations of her laboratories and other views, together with twelve quotations of the Richards philosophy of home and life. 50 cents, post paid. Address: American Home Economics Association, Roland Park, Baltimore. In observing Home Economics Day, committees are urged to extend the sale of the calendar as all proceeds go to the Memorial Fund. Sample on request; then take orders and send names, addresses, and money, whereupon calendars will be sent by mail direct to individual purchasers, without further trouble to local committees.

Lantern slides for lectures illustrating, (a) Mrs. Richards' life and work, (b) schools, colleges, and higher institutions teaching Home Economics, e.g., Simmons College, Chicago, Illinois, Wisconsin, Toronto, Teachers College, Pratt, Drexel, Mechanics Institute, and many others, can be furnished at 50 cents each, with 20 per cent reduction for ten or more.

Local Home Economics Committee: Schools and colleges, students' societies, women's clubs and other organizations are invited to form local committees to coöperate with the Ellen H. Richards Home Economics Fund, to plan the observance of Home Economics Day, and to secure contributions to establish this permanent agency for furthering the Home Economics idea and for bettering home life.

Information: Address: American Home Economics Association, Roland Park, Baltimore, Md., or Richards Memorial Committee as below.

The American Home Economics Association: President, Isabel Bevier, University of Illinois; Vice-Presidents, Charles F. Langworthy, U. S. Department of Agriculture, Washington, D. C.; Martha Van Rensselaer, Cornell University, Ithaca N. Y.; Abby L. Marlatt, University of Wisconsin, Madison; Treasurer, Howard L. Knight, Washington, D. C.; Secretary, Benjamin R. Andrews, Teachers College, Columbia University, New York City.

Richards Fund Committee: Mrs. Caroline Weeks Barrett, Isabel Hyams, Charles F. Langworthy, Ednah A. Rich, Benjamin R. Andrews, Secretary-Treasurer, address Teachers College, New York City.

ANNUAL MEETING AMERICAN HOME ECONOMICS ASSOCIATION.

The annual meeting of the American Home Economics Association will be held at Simmons College, Boston, Mass., Tuesday, December 31, 1912, to be preceded by the annual dinner on Monday evening, December 30. The Association will be the guests of the New England Association at the Boston meeting. The program follows:

Monday, December 30, 6 p.m. Informal dinner under the auspices of the New England Association. Tickets $1.25, may be secured in advance by addressing Miss Dodd, Garland School, Boston, Mass.

Roll call and reports from the field with informal discussion.

Tuesday, December 31, 9.30 a.m. Meeting at Simmons College: Papers: "Research Related to Household Economics," Miss Kingsbury, Simmons College, and Director of Research, Women's Industrial and Educational Union, Boston.

"Household Economics and Social Service," Mrs. Eva W. White, of Elizabeth Peabody House and Massachusetts State Education Department.

"A College Course in Household Economics," Benjamin R. Andrews, Teachers College, Columbia University.

1 p.m. Luncheon at the Simmons College Refectory, followed by an address by Dr. Snedden, Massachusetts Commissioner of Education.

3 p.m. Annual Business Meeting.

Report of president, Miss Isabel Bevier, University of Illinois.

Report of Editorial Board, Dr. C. F. Langworthy, U. S. Department of Agriculture.

Report of Administration Section, Miss Sarah Louise Arnold, Simmons College, Chairman.

Report of Housekeepers Section, Mrs. Lyndan Evans, Chairman.

Report of Ellen H. Richards Memorial Fund, Dr. B. R. Andrews, Chairman.

Report of Committee on Constitution and By-Laws, Miss Adelaide Nutting, Chairman.

Report of Committee on Publicity and Progress, Mr. Maurice Le Bosquet, Chairman.

Report of Committee on Legislation.

Report of Committee on Nominations and Elections, Prof. Henry C. Sherman, Chairman.

8 p.m. "Municipal and Business Relations of Home Economics." Speakers to be announced later.

The annual meeting of 1913 will be held the last week of June, 1913, at Cornell University, Ithaca, New York.

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NEWS FROM THE FIELD.

Proposed Sociological Exhibit for Panama-Pacific Exposition.

The Commonwealth Club of California, through its chairman, Mr. R. S. Gray, has inaugurated a movement looking to the organization and establishment at the Panama-Pacific Exposition in 1915, of an exhibit, a so-called Social Museum representing the latest results of human progress in sociology. We quote concerning the Harvard Museum from publication no. 4 of the Department of Social Ethics in Harvard University, entitled The Social Museum as an Instrument of University Teaching by Francis G. Peabody:

"May not the phenomena of social evolution, like those of physical evolution, be inductively approached? Is not the chief hindrance of social progress to be found in the failure to apply to the facts and movements of society the method of science, as though emotion and sentimentalism could be substitutes for accurate observation and prudent generalization? . . . . Finally, there was begun in 1903 the Social Museum, to promote investigations of modern social conditions, and to direct the amelioration of industrial and social life. Such a museum is undertaken on the assumption that the most immediate need of students concerned with the social question is, not merely enthusiasm or sympathy or self-sacrifice or money, but wisdom, discretion, the scientific interpretation and comparison of facts; and that this application of the inductive method may be encouraged by setting before the student in graphical illustration the evidence of progress in various countries and putting at his command the fund of experience accumulated in various parts of the world. The remoteness of the United States from other countries, and the brevity of its social history make this provision of illustrative material all the more necessary. Problems of the social order, which elsewhere represent gradual processes of social evolution, have presented themselves in the United States with startling abruptness and in dimensions of portentous magnitude, and put a sudden strain on political and social wisdom. . . . . These and many other social problems have in large measure taken Americans by surprise, and the science of society cannot safely proceed without new observation, comparison and appropriation of the experience of the world. The same demand for comparative sociology is laid, in various degrees, on other countries. The Harvard Museum is, it is believed, the first attempt to collect the social experience of the world as material for university teaching, and to provide guidance for academic inquiries into the study of social progress."

It is with these same ideas, on a larger basis, that the Commonwealth Club is making its plea for such a Museum at the Panama-Pacific Exposition. Various universities, scientific bodies and civic organizations have been asked to interest themselves in this great sociological exhibit. Speaking of the matter editorially one of the San Francisco papers says: "Heretofore world's fairs have been commemorative of some historical event or physical achievement. Here is an opportunity to make the Panama-Pacific Exposition something more than a visual chronicle

of mechanical progress—to make it a living example of social development of the great things that are being done in the world, of the things that indicate that "the people that walked in darkness have seen a great light:" and that light is the realization of the great truth that each stratum of society is dependent upon every other, and that it is not only the privilege but the duty of each to help the one below to a greater enjoyment of the gift of life."

It has also been proposed to call a meeting of a world-wide "Institute of Social Science" to meet on June 15, 1915, the seven hundredth anniversary of the date of Magna Carta.

National Conservation Exposition.

The National Conservation Exposition will be held in the fall of 1913, at Knoxville, Tenn. This exposition is planned in accordance with exposition history, especially to illustrate the modern idea of forecasting prospective development. It is intended to have exhibits of the resources in lands, forests, water, and mineral, and going one step farther to have exhibits of our natural human resources. Under human efficiency exhibits on health, education, and Home Economics will be made. The Home Economics program plans to exhibit (*a*) a model small dwelling properly furnished and cared for; (*b*) labor saving devices in the home; (*c*) demonstration meals publicly prepared and served by the domestic science classes of high schools and universities; (*d*) demonstrations of meat cuts; (*e*) demonstration of proper methods in marketing; (*f*) samples in domestic housekeeping; and (*g*) lectures on Home Economics.

Miss Bouton's Work in Nebraska.

Miss Rosa Bouton, who has been head of the Home Economics Department in the University of Nebraska since its organization fourteen years ago, has recently resigned.

The story of the simple beginning and rapid growth of this western department of Home Economics is only one of many such interesting tales which might be related. The work in Nebraska, however, is peculiarly the result of one woman's initiative. Were Mrs. Ellen H. Richards living, she could, as no one else, express the spirit of Miss Bouton's endeavor in this pioneer field, for Mrs. Richards was herself a pioneer. From her Miss Bouton received encouragement and inspiration at a time when educators were skeptical about this new subject in the curriculum. Aside from her work in connection with the University, Miss Bouton was interested in outside activities, and gave of her time and strength freely. Among these were the organization of a State Home Economics Association, plans for boys' and girls' clubs, lectures before farmers' institutes and women's clubs, and the introduction of domestic science in the Lincoln city schools and later in high schools throughout the state. Miss Bouton has published two in the series of Home Study Bulletins for the University of Nebraska, viz., "Convenient Kitchens" and "Cereals and How to Cook Them."

We quote in part an appreciative article which appeared in the *Nebraska State Journal* of August 12, 1912:

"Miss Bouton came to Lincoln to study chemistry with Professor Nicholson, whom she had known at the Nebraska State Normal in Peru. She received two degrees from the University of Nebraska, the first with the class of 1891, and the

master's degree in 1903, both being won while she was teaching in the department of chemistry. When she graduated in 1891 she was made a regular member of the teaching force for the chemistry department. The following year she introduced a course in chemistry of foods, but it was not until 1898 that the university authorities were finally aroused to the need of general domestic training for girls. In the meantime Miss Bouton had been dividing her time between the regular classes in chemistry and those for the study of domestic chemistry, but on account of a petition from the Association of Collegiate Alumnae Miss Bouton was informed in that year that she had permission to start a School of Domestic Science, provided that she could do the teaching herself, as "money was harder to get than blood out of dry bones." Accordingly, after spending the summer in study at Boston at her own expense, the teacher of chemistry became in 1898 the sole instructor for the School of Domestic Science. A room was obtained in Mechanic Arts' Hall, where cupboards, table, a sink, and a stove were installed. To equip the laboratory and provide supplies there was an appropriation of just $15, which was eked out by a small loan from the department of chemistry.

"The school of Domestic Science at this time was a two years' course, open to any woman without special college requirements. During the first year there were seventeen students, ten in the school and seven from the university classes. In 1912 the total number of students in the Home Economics Department, as the branch is now called, had increased to 310, 220 of these being in the college classes and ninety in the School of Agriculture.

"As the school progressed, new branches of study were urgently needed, but the money to secure teachers with the proper training was never available. For instance, the application for the addition of domestic art was granted, but Miss Bouton was again told that there was no money for a teacher of domestic art, and that if she wished to introduce such a course she must teach it. Accordingly she took another trip east and learned enough of the methods of other colleges to be able to teach the classes until a special teacher could be obtained. Thus, step by step, the course has been enlarged and broadened.

"In 1906 an appropriation for the present building was secured. As the knowledge of the requirements for such a building was decidedly vague in the middle west, before the adoption of plans Miss Bouton visited successful schools of the kind, made a careful study of architectural features and of materials, the expense of travel being borne by herself. Everything about the building was chosen to serve as an object-lesson to the students. The sinks in the kitchens were made of various material, to demonstrate practically the quality of different substances for the purpose. In the furnishing of the sleeping and living rooms, examples of hard woods were introduced for educative purposes. The building was first used in 1908, and the first summer school was held there in 1909. Since that time the building has been regularly in use for eleven months of the year.

"In 1906 the course of two years was changed to four, and the name became the Home Economics Group of the College of Agriculture. The building and equipment are now valued at $70,000 and the teaching force includes eight people. There will be many to credit with due honors for the future growth of the work, but there was but one pioneer to establish it."

Circular sent out by the Housekeepers' Alliance of Washington, D. C.

To the Women's Clubs of Washington: The Committee on Civics and Sanitation of the Housekeepers' Alliance is sending this appeal to all the Women's Clubs in Washington, asking if they will not join us in our efforts to secure wrapped bread, by calling the attention of their members to the insanitary conditions under which our bread is handled after it leaves the bakers' oven.

A moment's thought will convince anyone that food which can neither be washed nor recooked before eating, should be so protected that dirt, dust, disease germs and flies cannot have access to it.

Even though the bakery wagons are enclosed at sides and rear, the front is often open, so gusts of germ laden dust blow onto the bread.

When it is taken out it is piled into a basket by the driver, who has just thrown down the dirty reins, and sometimes he disobeys orders and carries it in his arms, pressed against his soiled clothing.

It is often piled on the open counter, in grocery or market, where persons passing rub against it, and purchasers lay their soiled shopping bags or bundles on it, or handle it over to determine the texture.

When the store or market is swept, there is a fresh consignment of dust and germs, as though there were not enough already.

Bread passes through about six pairs of hands on its way to our tables. Those handling it may have colds, influenza, grippe, tuberculosis, or vice diseases, and leave the germs of these diseases clinging to it.

Notice how soiled the hands of your marketman or groceryman are as he handles your bread.

Many cities and even villages, where the bread is shipped in from a distance, have wrapped bread, and the price is not increased or the weight of the loaf diminished.

If the bread is replaced in the paraffine paper, it solves the problem of stale bread in the kitchen, as it keeps fresh so much longer. The Alliance has been trying for the past year to secure some wrapped bread in the city.

We visited some of the large bakeries, and found them in a sanitary condition, and felt their bread was more hygienic than that baked in the average kitchen. The one thing needful is that it should be wrapped before it leaves the bakery.

Flies are with us a good part of the year and it is a well established fact that flies carry typhoid fever and intestinal disease germs with them, and expose us to these diseases, when they crawl over our food.

Flies killed more soldiers in the Spanish War than all the bullets of the enemy! And yet we calmly and deliberately buy bread, and other foods, with swarms of flies crawling over it! And how many of us ever remonstrate with out dealers?

There is an ordinance in the District requiring meats and fruits to be protected from flies. Then why do we submit to the insanitary conditions that prevail here in fly time? When public opinion demands it, this ordinance will be complied with.

Dealers who are using ice-cooled glass cases for their meats, tell us the saving more than pays the cost of the cases. One new model with sliding doors at the top is proving most satisfactory. The meat is kept cold even when the door is left open, as the cold air falls to the bottom of the case.

One of our large bakers in town has under consideration a new bread wrapping machine which is soon to be placed on the market. He hopes to install one of them in his bakery within a few months. The Housekeepers' Alliance has promised to back the undertaking by advertising his wrapped bread. The press has been very helpful in giving publicity to our efforts, and in helping to create an interest in the matter.

Pure food handled in a sanitary manner will do much towards eliminating preventable diseases.

GEORGIA ROBERTSON,
Chairman of Committee on
Civics and Sanitation of the Housekeepers' Alliance.

Maryland State Federation of Women's Clubs.

The following lecture course for the season 1912–1913 has been announced by the Home Economics Section of the Maryland State Federation of Women's Clubs: Thursday, November 7, Weights and Measures, Dr. F. Reichmann, superintendent of weights and measures, State of New York; Thursday, December 5, Household Accounts with Simplified Methods, Mr. H. L. Stevenson, auditor, Bell Telephone Company; Thursday, January 9, Round Table on Weights and Measures with Reports on Use of Scales by Housekeepers, led by Mrs. John J. Abel; Thursday, February 6, Marketing—With a Report of a Baltimore Coöperative Buying Club, Mrs. Anna B. Scott, *Philadelphia North American;* Thursday, March 6, Savings—Saving Banks, Mr. Edward L. Robinson; Life Insurance, Mr. C. T. Thurman; Building and Loan Associations, Mr. John Hannibal; Thursday, April 3, Laws of Inheritance in Maryland, Laws Affecting Domestic Service in Maryland, Hon. Alfred S. Niles.

Connecticut Home Economics Association.

The Home Economics Association of Connecticut was formed in October, 1909, for the purpose of bringing about greater coöperation among the departments of domestic science and domestic art in the schools of the state. The late Mrs. Ellen H. Richards, first president of the American Home Economics Association addressed the preliminary meeting.

Two regular meetings are held each year. The May meeting can be held in any city or town in the state. In October a meeting is held alternately in Hartford and New Haven in connection with the State Teachers' Convention.

The Association has been fortunate in obtaining interesting and enthusiastic speakers for each meeting. The annual spring meeting was held in Waterbury at the Institute of Craft and Industry. The subject of the day was "The Relation of the Teacher of Household Arts to the Home of the Pupils."

The Association has been asked to have an exhibit at the Connecticut Fair, Charter Oak Park, Hartford, Conn. This exhibit will be in connection with the Child Welfare section.

The Ellen H. Richards School.

The school authorities of the city of Boston have taken action to name one of the new public schools of the city "The Ellen H. Richards School." A portrait of Mrs. Richards has been presented to the school by some of her Boston friends.

Home Makers Exhibit and Conference.

A notable exhibit has been announced to take place in Chicago at the First Regiment Armory, November 18 to 23, for the benefit of the school of Domestic Arts and Science. On the large floor space that has been rented, firms representing household appliances, foods, etc., will exhibit. An interesting program will be furnished by well known lecturers, and various organizations as the Chicago Woman's Club and the College Club will serve tea during the afternoons of the week.

An admittance fee will be charged and it is hoped to realize a large sum to meet the needs of the school which was formerly the Woman's Department of the Armour Institute.

The Adelaide Hoodless Memorial at Macdonald Institute.

A portrait of Mrs. Adelaide Hoodless was presented to the Macdonald Institute on October 3 by the Women's Institutes of Ontario. Accompanying the portrait was a bronze tablet, suitably inscribed, presented by the former students of the Ontario Normal School of Domestic Science and Art and of the Macdonald Institute. To Mrs. Hoodless above anyone else do the Ontario Women's Institutes, now so well known in all parts of the country, owe their origin. An account of these Institutes will appear shortly in the JOURNAL. In addition to being the originator of the Women's Institutes idea, Mrs. Hoodless was pioneer in the introduction of household science and manual training into the schools of Canada, and it was largely through the efforts of Mrs. Hoodless that Macdonald Institute was founded in 1903, her efforts in the formation of a normal school of domestic science and art at Hamilton leading to the amalgamation with the Guelph institution. A short account of the life and work of Mrs. Hoodless appeared in the JOURNAL for June, 1910.

Maryland Agricultural College.

A second course in domestic science will be offered the women of Maryland from January 13–18, 1913. The advance program gives the following lectures: Fibers and Textiles, Bread Making, Sewing and Dress Planning, House Furnishings, Planning Meals, Mrs. C. W. Foulke of the Ohio State University; Household Chemistry, Bacteriology, Dr. C. O. Appleman of the Maryland Agricultural College; Disposal of Waste, Dr. W. L. Taliaferro, Maryland Agricultural College; Fireless Cooker, Milk, Miss Mary A. Burnite, New York City; and Ventilation, Mrs. H. J. Patterson. Visits of inspection have been planned to the laboratory where the serum for hog cholera is prepared, the sewage plant and the dairy barn of the Maryland State Agricultural Experiment Station.

Canton (China) Christian College.

During one month of the summer recess a School of Domestic Science for Women was conducted on the grounds of the Canton Christian College. This school was entirely in charge of some of the Christian College students, and grew out of a desire on their part to share with their wives and sisters the educational benefits there received. Assistance was given by the Americans on the place and by outside lecturers. The daily program included Bible study, a small amount of academic work, and lectures on such subjects as child study, nursing, cooking, sanitation, physiology, and hygiene.

The laboratory method was used. Single lectures were given on house decoration, the care and feeding of infants, exercise, care of the teeth, etc. The hope is that this beginning may be carried on to a larger and more useful work in years to come.

Evening Textile Courses at Teachers College.

The School of Practical Arts, Teachers College, Columbia University, offers for 1912–1913, beginning October 21, two evening courses on Textiles consisting of twenty-five sessions. I, Silks. Silk Mixtures and Merchandising. II, Woolens and Worsteds. The first series will be given by Mr. James Chittick, silk manufacturer, author of "Silk Manufacture and Its Problems." Among the topics outlined for the course are: Silk-worm rearing; silk reeling; raw silk; spun silk or schappe; system of counts and numbering; skein-dyeing, and piece-dying; fabrication of goods; designing; standard market fabrics; imperfection in goods; silk printing; ribbon manufacturing; pile fabrics; power and its transmission; system for cost verification; management and financing; merchandising. The lectures on Woolens and Worsteds will be given by Mr. Theodor Quasebart, graduate of the Higher Technical School of the Textile Industry at Aachen, Germany, himself a textile designer. Among the topics of this course are: Classification of raw materials; animal fibers; sheep's wool; classification of wools; spinning; designing; finishing and dyeing; cloth construction; general discussions: In regard to mill operation, labor situation, labor troubles, speculation in merchandise, delivery of merchandise, merchandising.

Omicron Nu, Honorary Society, Michigan Agricultural College.

The question of an honorary society for the women at the Michigan Agricultural College has been considered for some time. In 1909–10 letters were sent out regarding such a society, and it was found that none existed. The faculty of the Department of Home Economics took up the matter, and finally presented a recommendation, with a proposed constitution to the college faculty which was adopted. The new society is known as Omicron Nu, taken from the Greek, meaning to "manage a household." The object as stated in the constitution is to further scholarship and Home Economics among its members. The constitution is based upon those of Sigma Xi and Phi Beta Kappa, to both of which women are admitted. The Alpha Chapter, as the chapter at the college is called, is in a flourishing condition, and at the first regular meeting of the present scholastic year initiated two faculty members and four seniors. Other colleges have made inquiries and are taking steps towards securing charters. A society of this kind should meet a need in those institutions where Home Economics courses, equivalent to the usual four-year college courses, are offered.

University of California.

The University of California has recently added two new nutrition courses to the work of the Home Economics department, one Feeding Infants and Children, and the other a seminar on Dietaries for Institutions, Asylums, etc. Miss Mary E. L. Kissell has been appointed associate professor of domestic art, and her work will include lectures on textiles, household design of primitive peoples, and household design in modern homes.

BOOKS AND LITERATURE.

The Life of Ellen H. Richards. Caroline L. Hunt. Whitcomb and Barrows, Boston. $1.50.

The biography of Ellen H. Richards is the record of a remarkable life spent during a period of rapid and far-reaching social changes which created a demand for a radical readjustment on the part of individuals, particularly of women, to new conditions. Some readers (and this will include members of the American Home Economics Association and those who are following professionally in the path where Mrs. Richards led) will approach the book with interest centered upon her personality, for such workers feel with gratitude that they are building upon a foundation which she laid and that much of the progress which they are able to make is due to the public opinion which she created and to the removal by her of the barriers of prejudice and conservatism. Others not immediately connected with the movements which she inaugurated and who had no personal contact with her will doubtless take up the book chiefly to learn what light it sheds upon the period in which she lived.

Whatever the mode of approach, readers will hardly fail to be impressed with her power and with the fine adjustment of her activities to the needs of her generation. Those whom the passing of older religious sanctions is setting adrift will be helped to find their bearings as they learn how by "keeping her ears open to the whisperings and her eyes clear for the inner light," she was able to merge a girlhood of strict religious conformity into a womanhood of equally passionate service of humanity. Her steadfast purpose "to keep the body in good condition to do the bidding of the spirit," which was formed while she was in college and which later became the keynote of her teaching, gave vitality and continuity to her inner life in an age of unsettled creeds.

Ellen Swallow Richards was born late in the year 1842 on a farm near an isolated village in northern Massachusetts. At this time, the great industrial changes which later revolutionized women's work had hardly begun to affect the household. Under the tutelage of a mother who was a skillful housekeeper, she was thoroughly trained in all the domestic arts. When, therefore, she urged in later years that instruction in these arts be introduced into the lower schools, it was with full understanding drawn from experience of their practical as well as their educational value. We learn from repeated statements of hers quoted in the book that she believed that household tasks performed in one's youth give a muscular training for which it is difficult to find a substitute in later life. "*Housework*," she said, "is to be prepared for by manual exercise, and *housekeeping* by mental exercise." Again she said, "Intelligence does not make up for lack of early muscle training."

Mrs. Richards' exceptional forcefulness and steadfastness of purpose were first demonstrated by her determination to go to college. Up to the time she was twenty-three, there were no colleges open to women either in New England or in other parts of the eastern United States. In September, 1865, Vassar Female

College, which later became Vassar College, was opened and she immediately began to save money with which to get a college education. She taught school, sewed, made "wax flowers," the then popular form of amateur art work, and became assistant to her father in the village store and post office all with a view to making money. At the same time she was reading and studying, and in the fall of 1868 she was able to enter the junior class of Vassar. During her college course, she wrote long weekly letters to her mother and father giving minute details of the circumstances of her life. Extracts from these letters have been brought together in the book, and form what is perhaps the best record ever published of life in a woman's college during the early years of higher education for women.

Entering college at the age of twenty-six and leaving it at the age of twenty-eight after having made an exceptionally good record in languages and literature, it seems remarkable that Mrs. Richards should not have fallen completely under the spell of that form of education. She was original in thought, however, and soon her critical mind was turned upon the academic training of the times to question its ultimate value. Circumstances helped her to formulate her criticisms. When she returned from college, she found her father struggling with a new business, that of the manufacture of artificial stone, and needing more knowledge of the composition of the materials which he was handling. She had taken all the scientific courses but one offered in Vassar, had had the advantage of training under Maria Mitchell, and also under Prof. Charles Farrar, a chemist who was ahead of his time in his desire to make his science of practical value. But all the scientific instruction then offered in an undergraduate course could carry her only a short way toward a thorough understanding of any one of the sciences, and she immediately began to look about for more thorough instruction in chemistry—a subject in which she had become especially interested. The efforts which she made to open the doors which had hitherto been closed to women, and which finally resulted in her being accepted as a special student in the Massachusetts Institute of Technology, form by no means the least interesting portion of the book. In January, 1871, she began her work there, becoming the first woman to be admitted to any strictly scientific school in America.

Fortunately, shortly after she entered the Institute one of her professors, William Ripley Nichols, was chosen to do the chemical work for an extensive examination of the water supplies of Massachusetts for the State Board of Health (the first board of the kind to be established in the country) and he chose her as his assistant. Thus, she was led to the pursuit of sanitary chemistry to which the greater part of her professional labors in after life were devoted. Because she was so widely known as the leader of the movement for introducing instruction in Home Economics into the schools, she is often thought to have followed this work as a profession but, in reality, her activities in this field were performed in what she was in the habit of calling her "playtime." From 1884 until her death in 1911, she was instructor in sanitary chemistry in the Institute of Technology. During this time, she had an important part in a second and more extensive survey of the waters of the state, which continued for a year and during which time the waters were analyzed monthly. In this survey and in her work as a water analyst, some of it done for fees but much of it solely for the public good, she made a most important contribution to public health.

She had been admitted to the Institute as a special favor but she was not content to enjoy its advantages without endeavoring to secure them for other women.

In 1876, therefore, she began an active campaign for a Woman's Laboratory in connection with the institution. In this, she finally succeeded through the coöperation of an organization of public-spirited women in Boston, known as the Women's Education Association. For eight years from 1876 to 1884, Mrs. Richards not only gave her services to the Woman's Laboratory but contributed to its support an average of a thousand dollars a year from her earnings as an analyst.

It was in 1876 also that she became connected with the first organized attempt in this country to teach by correspondence, "The Society to Encourage Studies at Home."

Repeatedly in her correspondence-teaching she read of study interrupted on account of sickness. To this and her connection with the Woman's Laboratory, which showed her how many girls were physically unable to carry on the work they attempted, may be ascribed her enthusiasm for popularizing the teaching of hygiene. To quote from the biography "Conviction that the world was full of unnecessary sickness, and that men and women were falling far short of the joy of living and of doing which ought to be theirs, grew upon Mrs. Richards with her experiences in the Woman's Laboratory and with her insight through correspondence into the home life of America. With the conviction came the desire to have a part in removing this deplorable handicap. "We must see to that," she once wrote in her diary, after recording a grievious social injustice which had been brought to her attention. She did see to it in the matter of preventable disease, for from the moment of her own conviction she labored unceasingly wherever and with whomsoever she saw an opportunity to improve the material conditions of living. She came in the course of time to be prominently identified with the Home Economics movement. But this was only part of the great, absorbing interest of her life, which included the bettering of conditions in the community, in the school and in the factory, as well as in the home. This larger and more inclusive interest, though neither named nor defined by her until shortly before her death, early took full possession of her powers, and the last thirty years of her life were given to developing the "science of controllable environment," for which she coined the name "Euthenics."

Because of her deep-seated belief that women should look deeper into the nature of the common things of life with which they were constantly dealing, Mrs. Richards endeavored to direct the work in the Woman's Laboratory toward household chemistry. It was while she was making this effort that she was called to Poughkeepsie by Maria Mitchell to address the Woman's Club of that city. There in the winter of 1879 she read a paper on "Chemistry in Relation to Household Economy," which was so much ahead of its time that it could be acceptably delivered before a body of intelligent women today without arousing the criticism that its recommendations were out of date. This address, from which extracts are given in the biography, is only one evidence that Mrs. Richards was far ahead of her time in her thoughts and interests.

Scientific management was also known to Mrs. Richards and practiced long before the term was coined, a fact which is indicated not only by the directions whi. h she gave to students in the laboratory for saving motions but also by the conduct of her own house.

The chapter which deals with Mrs. Richards in her home serves to refute the oft-repeated statement that a woman can not carry on a profession and maintain a satisfactory home at the same time. In June, 1875, Ellen Swallow was married

to Prof. Robert H. Richards, head of the Department of Mining Engineering in the Massachusetts Institute of Technology; and together they established a home in the nearby suburb of Jamaica Plain which became not only a model of good housekeeping and healthful living conditions, but also a center of hospitality for the faculty and students of the Institute and for their friends.

Space is not sufficient to tell of the movements of which Mrs. Richards was the originator. The New England Kitchen of Boston, of which she was the founder, was an experiment in serving well-cooked food at low prices. The Rumford Kitchen at the World's Fair in Chicago in 1893 of which she had charge, was the first important effort made in this country to demonstrate to people at large the fact that there is a science underlying nutrition. She was instrumental in founding school lunches and an organizer of other enterprises which had for their object a better utilized food supply.

She was a charter member of the Association of Collegiate Alumnae and also of the Naples Table Association and was connected with many other organizations which have had an important part in opening opportunities for higher education to women. She was back of an important investigation made in Boston of the sanitary conditions of the public school houses.

In 1899, Mrs. Richards with Mr. and Mrs. Melvil Dewey organized the Lake Placid Conference on Home Economics which later became the American Home Economics Association and has brought together into an effective working group the scattered forces which are making for better homes. The journal of the Association was the object of her special interest during the last months of her life.

In this record of Mrs. Richards' life, written by Miss Caroline L. Hunt, there is evidence on every page that it is the outcome of profound admiration and the love of a disciple. This obvious devotion will be easily understood by the thousands of those who are indebted to Mrs. Richards for help, guidance, and encouragement. There is evidence that the writer has held herself under restraint for fear that the value of the narrative may be lost in praise. In spite of this restraint, members of the Home Economics Association who read this straightforward and direct story of a remarkable life will find between the lines the unbounded admiration and gratitude which they share.

The attractive form in which the book appears is due to the publishers, Mr. Frank Whitcomb and Miss Mary Barrows, of the firm of Whitcomb and Barrows, who in the publishers' note acknowledge their indebtedness to Mrs. Richards for "constant and innumerable kindnesses" and who state that "through seven years of development their best business asset was her good will."

The book is illustrated with photogravures, many half-tones, and reproductions of pen-and-ink sketches. Particularly interesting are the portraits of Mrs. Richards. The book will appeals to lovers of biography as well as to those who have a personal or a professional interest in the subject as it will attract young readers who will profit by the message of a life of earnest purpose and remarkable accomplishment.

Home Training Bulletins. The series of Home Training Bulletins issued by Professor McKeever are on the following subjects: No. 1, The Cigarette Smoking Boy; No. 2, Teaching the Boy to Save; No. 3, Training the Girl to Help in the Home; No. 4, Assisting the Boy in the Choice of a Vocation; No. 5, A Better Crop of Boys and Girls; No. 6, Training the Boy to Work; No. 7, Teaching the

Girl to Save. Other contemplated numbers are: Instruction in Regard to Sex; Training for Moral Reliance; Social Companions for the Young; Employment for the Boy During Vacation. Free (2 cents postage each) to all persons who ask for them. One cent each prepaid in quantities for free distribution. Address, Wm. A. McKeever, Manhattan, Kan.

Every pamphlet of this series is sane, practical and sympathetic. Parents will seek in vain for wiser treatment of these important subjects.

Women of Tomorrow. By Willian Hard. Baker Taylor Company, New York.

The five chapters, Love Deferred, Learning for Earning, Learning for Spending, the Wasters and Mothers of the World are reprints of articles that appeared in *Everybody's Magazine* and their journalistic jauntiness of style has not been modified. Those interested in Home Economics acknowledge their debt of gratitude to Mr. Hard for his skill in bringing these subjects to the attention of the average reader.

In Learning for Spending he shows his grasp of the modern understanding of the function of women and the need of training for it. The training of the adult by Correspondence Courses, Home Makers Conferences, Farmers Bulletins and advance courses in colleges he looks on with especial favor because the lessons come at the time when they can be carried forward into action. The Wasters shows with delightful irony how all that is good in a girl may atrophy by relieving her by false kindness "from struggle, from effort, from discipline and from the sorrow of pain that brings the joy of accomplishment."

On Sex Hygiene. Dr. E. B. Lowrey's books on sex hygiene, False Modesty, Confidences, Truth, and Herself are the titles of four books on Sex Hygiene published by Forbes and Company of Chicago which deal with the subject with frankness and yet with delicacy. They have the approval of reputable physicians.

Home Progress. This new journal, still in its first year, is published monthly by Houghton, Mifflin Company of Boston as part of the Home Progress Reading Courses. According to the plan as outlined by the editor there will be in addition to special articles "a series of questions and suggestions intended to bring out the experience of the members on a wide variety of subjects connected with the welfare of children." Letters of enquiry are personally answered. This liberal plan for the home education of the parent seems to be carried out faithfully and with an understanding of how great may be the perplexity of the persons of average intelligence who is being bombarded in popular books and journals by ill-assorted advice on this most important subject.

The editor is Miss Elizabeth McCracken, whose sympathetic studies of the American Child are already familiar to us. Sympathy, indeed, is the keynote of this new venture, the sympathy which brings understanding of the problem and which never degenerates into mawkishness. The books for supplementary reading are admirably chosen.

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